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Mining & Minerals Division
BC Geological Survey

Assessment Report
Title Page and Summary

TYPE OF REPORT [type of survey(s)]: Soil Geochemistry

TOTAL COST: \$17,989.00

AUTHOR(S): Peter Holbek, Richard Joyes SIGNATURE(S): _____

NOTICE OF WORK PERMIT NUMBER(S)/DATE(S): N/A YEAR OF WORK: 2013

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5474901 Oct 31/13

PROPERTY NAME: SUSTUT PORPHYRY

CLAIM NAME(S) (on which the work was done): Jake North

COMMODITIES SOUGHT: Copper, Gold

MINERAL INVENTORY MINFILE NUMBER(S), IF KNOWN: 94D/061

MINING DIVISION: Omineca NTS/BCGS: 94D/3W

LATITUDE: 56 ° 14 ' 23 " LONGITUDE: 127 ° 19 ' 10 " (at centre of work)

OWNER(S):
1) Electrum Resource Corp. 2) _____

MAILING ADDRESS:
912-510 West Hastings Street
Vancouver, B.C V6B 1L8

OPERATOR(S) [who paid for the work]:
1) Copper Mountain Mining Corp. 2) _____

MAILING ADDRESS:
1700-700 West Pender Street
Vancouver, BC V6C 1G8

PROPERTY GEOLOGY KEYWORDS (lithology, age, stratigraphy, structure, alteration, mineralization, size and attitude):
Bowser Basin, Skeena Fold Belt, Bowser Lake Group, Katsberg intrusions, Jurassic, Cretaceous, thrust faults, flat lying strata, pyritization, quartz veining, intrusive-sedimentary contacts, argillic alteration

REFERENCES TO PREVIOUS ASSESSMENT WORK AND ASSESSMENT REPORT NUMBERS: 30040, 25931, 25530, 20607, 3868, 4563

TYPE OF WORK IN THIS REPORT	EXTENT OF WORK (IN METRIC UNITS)	ON WHICH CLAIMS	PROJECT COSTS APPORTIONED (incl. support)
GEOLOGICAL (scale, area)			
Ground, mapping	_____	_____	_____
Photo interpretation	_____	_____	_____
GEOPHYSICAL (line-kilometres)			
Ground			
Magnetic	_____	_____	_____
Electromagnetic	_____	_____	_____
Induced Polarization	_____	_____	_____
Radiometric	_____	_____	_____
Seismic	_____	_____	_____
Other	_____	_____	_____
Airborne	_____	_____	_____
GEOCHEMICAL (number of samples analysed for...)			
Soil 89	_____	Jake North	17,989
Silt 1	_____	"	_____
Rock 1	_____	"	_____
Other	_____	_____	_____
DRILLING (total metres; number of holes, size)			
Core	_____	_____	_____
Non-core	_____	_____	_____
RELATED TECHNICAL			
Sampling/assaying	_____	_____	_____
Petrographic	_____	_____	_____
Mineralographic	_____	_____	_____
Metallurgic	_____	_____	_____
PROSPECTING (scale, area)			
PREPARATORY / PHYSICAL			
Line/grid (kilometres)	_____	_____	_____
Topographic/Photogrammetric (scale, area)	_____	_____	_____
Legal surveys (scale, area)	_____	_____	_____
Road, local access (kilometres)/trail	_____	_____	_____
Trench (metres)	_____	_____	_____
Underground dev. (metres)	_____	_____	_____
Other	_____	_____	_____
TOTAL COST:			\$17,898.00

Soil Geochemical Program

on the

Sustut Porphyry Property

Omineca Mining Division, British Columbia

NTS 94D /3

UTM: 607,500E; 6,230,000N (Zone 10, NAD 83)

Owner:

Electrum Resource Corporation
904-1050 West Hastings Street,
Vancouver, BC.

Operator:

Copper Mountain Mining Corp.
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January, 2014

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1. Introduction

1.1 Introduction and Exploration Objectives

The Sustut Porphyry property is one of a number of properties in the Bear Lake area that are under option to Copper Mountain Mining from Electrum Resource Corporation. Work was done collectively on all properties over the period of October 6th to 12th, 2013, although each property in the package is reported on separately. The Sustut Porphyry property (formerly the “Jake” property) has been the subject of numerous exploration programs of which the most significant was undertaken during the years 1997 and 1998 when Teck Exploration acquired the property and carried out soil geochemistry, hand trenching and a drilling program.

Prior to initiating a field based exploration program, Copper Mountain commissioned PhotoSat to obtain and process Spot Satellite imagery of the claim areas, and also obtained TRIM topographic data from the Government of BC, in order to provide base maps and to assist with a regional geological study and data compilation (Holbek and Joyes, 2012). Compilation of historical data and subsequent field examinations were conducted in 2012 (Holbek and Joyes, 2013). Results of this work indicated that surface samples with prospective copper and gold grades were located in a relatively small area of the gossan zone, on the north end, which is the area drill tested by Teck. Geological mapping indicated that monzonitic rocks occur in the form of a north-easterly trending dyke swarm intruding Bowser Group Sediments. The largest gossanous exposure was examined and sampled with discouraging results. Examination of drill core suggested that mineralization was concentrated along the contacts between monzonite and sedimentary rocks, near the uppermost levels of intrusion. Therefore a prospective area for discovery of additional mineralization would be to the north of the drilled area. In order to test for a northward continuation of mineralization, a geochemical survey consisting of three contour soil lines with approximate 50m sample spacing and 50m vertical separations between the lines was carried out and forms the subject of this report.

1.2 Location and Access

The general location of the Bear Lake area is presented on the BC map of Figure 1.1 and the actual claims are shown on figure 1.2. A more regional perspective of the claim location is given on the regional geological plan, Figure 2.1. The property is situated 9.5 km south of the confluence of the Sustut and Skeena Rivers and 4 km southwest of the confluence of west and main branches of the Squingula River, at UTM coordinates of 604000E and 6,232,000N, on the NTS map sheet 94D/2W and 3E. Currently, the property is not road accessible and requires helicopter access, with the nearest helicopter base in the town of Smithers, 150km to the south. However, logging operations are being carried out just to the south of Bear Lake via road networks extending south to the Babine Lake area. Additionally, remote logging has, taken place recently, to the northwest of the property; this logging operation used the old BC rail line for access and log transport and therefore has no external road

connections, but a bridge has been constructed across the Sustut River, approximately 15.3 km to the northeast of the property, and cut blocks have been placed as close as 7.6km to the north of the property.

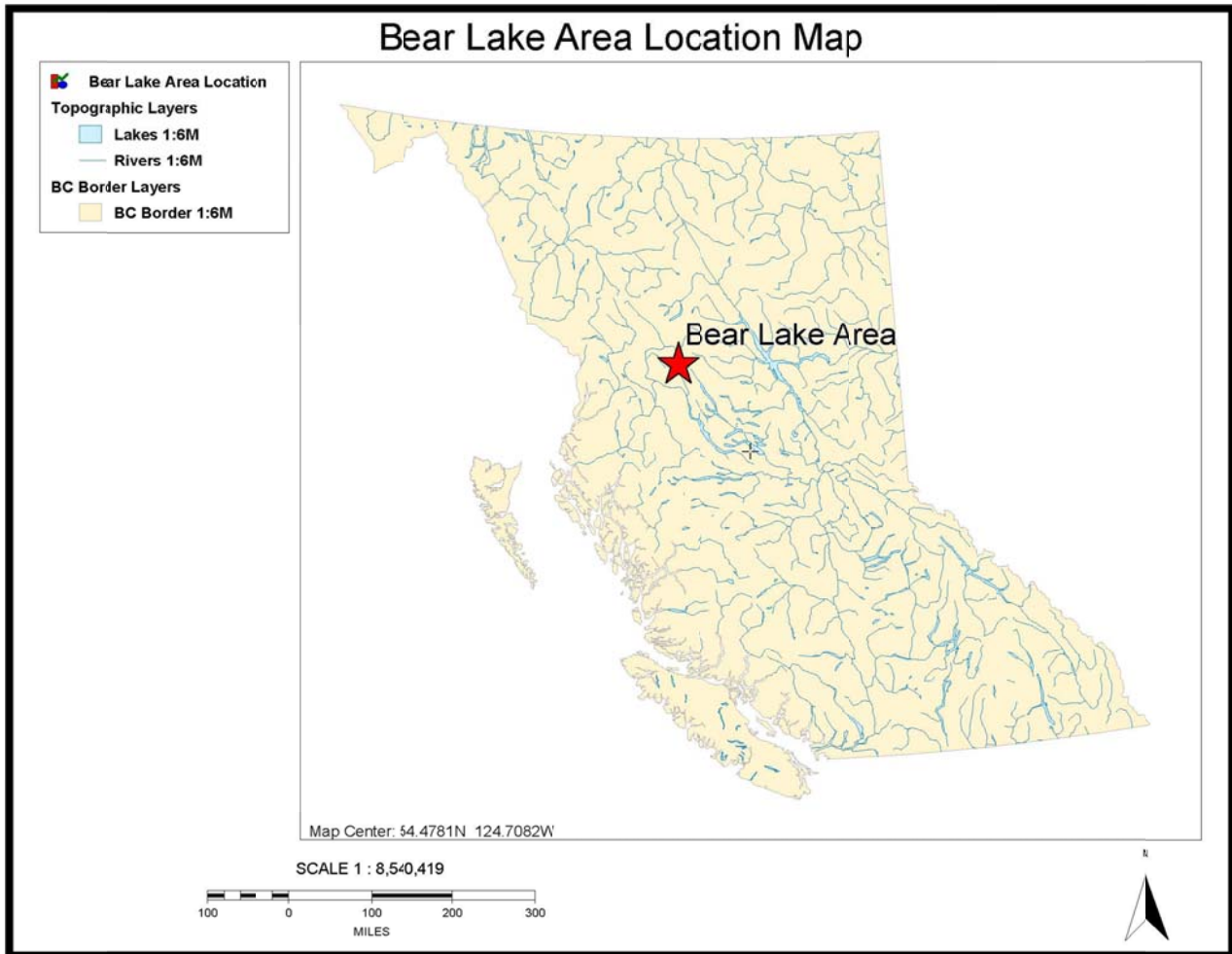


Figure 1.1 Location of the Bear Lake Project Area.

1.3 Property Status and Ownership

There are 4 properties within the study area, all of which are made up of multiple claims. Claims that comprise the Sustut-Porphyry property are listed below in Table 1.1 and illustrated in figure 1.2. All claims are owned by Electrum Resource Corporation of Vancouver.

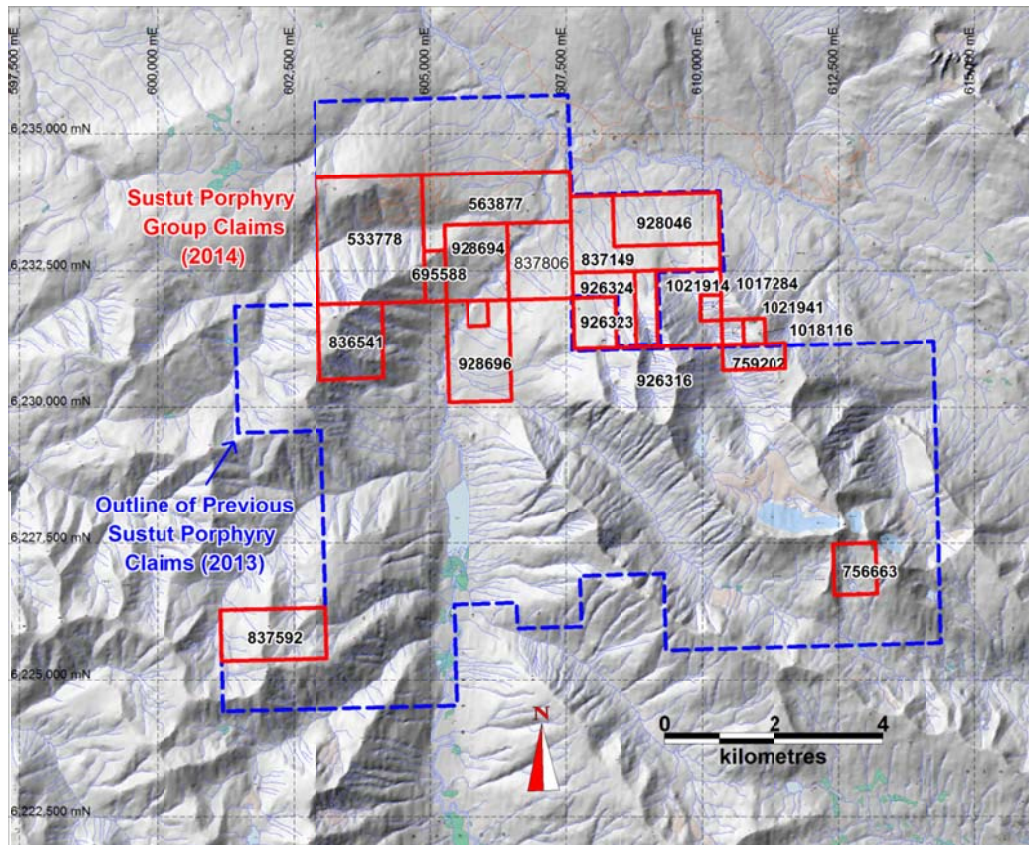


Figure 1.2. SUSTUT-PORPHYRY property Claim Locations

1.4 Physiography and Climate

The properties cover a wide variety of terrain, but are generally centered on ridges or mountain tops and are large enough to incorporate adjacent valley bottoms. Elevations on the properties range from 2,300m to 1,100m. Tree-line is generally at, or around the 1,500m elevation. The properties to the west have higher elevations and more rugged terrain whereas the eastern properties are lower with slightly more subdued terrain due to rounded-off ridges due to large ice-sheet type glaciation. More recent alpine glaciation has created small cirques. A strong northwest-southeast orientation of the drainages and ridges on the eastern part of the study area is a relic of continental glaciation.

Forest cover at lower elevations consists of relatively mature stands of pine and spruce, although tree size is limited due to the average elevation. Swamps are common in the rounded valley bottoms and large numbers of avalanche chutes, filled with slide alder and devil’s club attest to relatively high snow loads during the winter. Proximity of the area to the Skeena River valley, to the north, allows an influence of coastal climate to sneak into the area, resulting in higher precipitation than one would normally expect at this easting.

Table 1.1 Mineral Tenure Details

Tenure Number	Claim Name/Property	Issue Date	Good To Date	New Good To Date	Area in Ha
563877	JAKE NORTH	2007/jul/30	2012/jul/31	2015/apr/28	916.87
533778		2006/may/08	2012/jun/15	2015/apr/29	449.61
659588	SUSTUT 3	2011/jun/26	2012/jun/15	2015/may/28	35.97
756663	SUSTUT PORPHYRY 23	2010/apr/25	2012/jun/15	2013/oct/31	72.04
759202	SUSTUT PORPHYRY 19	2010/apr/27	2012/jun/15	2015/jun/16	143.96
836541	SUSTUT PORPHYRY 8	2010/oct/24	2012/jun/15	2014/dec/31	431.83
836992	SUSTUT PORPHYRY 11	2010/oct/30	2012/jun/15	2013/dec/17	324.04
837149	SUSTUT PORPHYRY 6	2010/nov/02	2012/jun/15	2015/jun/19	197.83
837592	SUSTUT PORPHYRY 15	2010/nov/05	2012/jun/15	2013/oct/31	180.14
837806	SUSTUT PORPHYRY 5	2010/nov/07	2013/dec/29	2014/dec/29	431.78
846350	SUSTUT PORPHYRY 16	2011/feb/13	2012/jun/15	2013/oct/31	144.13
855354	SUSTUT PORPHYRY 22	2011/may/21	2012/jun/15	2013/oct/31	216.10
855357	SUSTUT PORPHYRY 28	2011/may/21	2012/jun/15	2013/oct/31	216.10
855395	SUSTUT PORPHYRY 20	2011/may/22	2012/jun/15	2013/oct/31	216.02
855396	SUSTUT PORPHYRY 29	2011/may/22	2012/jun/15	2013/oct/31	215.95
857017	SUSTUT PORPHYRY 19A	2011/jun/16	2012/jun/15	2013/oct/31	143.99
857018	SUSTUT PORPHYRY 19B	2011/jun/16	2012/jun/15	2013/oct/31	144.02
837149	SUSTUT PORPHYRY 6	2010/nov/02	2014/jun/19	2015/jun/19	197.83
928046	SUSTUT PORPHYRY 6B	2010/nov/03	2013/dec/23	2014/dec/23	179.83
916949	SUSTUT PORPHYRY 1A	2011/oct/17	2012/jun/15	2013/oct/31	216.05
917649	SUSTUT PORPHYRY 2A	2011/oct/18	2012/jun/15	2013/oct/31	216.03
926316	SUSTUT PORPHYRY 9B	2011/oct/28	2014/may/05	2015/may/05	53.97
926323	SUSTUT PORPHYRY	2011/oct/28	2014/may/04	2015/may/04	71.96
926324	SUSTUT PORPHYRY 9BW	2011/oct/28	2014/may/03	2015/may/03	89.95
928694	SUSTUT PORPHYRY 4A	2011/nov/09	2014/may/27	2015/may/27	161.87
1021914	SUSTUT PORPHYRY 32	2013/aug/28	2014/aug/28	2015/aug/28	143.92
1017264	SUSTUT PORPHYRY 33	2013/feb/27	2014/feb/27	2015/feb/27	17.99
1021941	SUSTUT PORPHYRY 32B	2013/aug/29	2014/aug/29	2015/aug/29	17.99
1018116	SUSTUT PORPHYRY 35	2013/mar/28	2014/mar/28	2015/mar/28	17.99

1.5 Exploration History

The mountainous region near the center of the northern half of British Columbia has historically been relatively inaccessible. A placer gold discovery in 1899 on McConnell Creek marked the first interest in mining in the area and subsequent discoveries resulted in wide-spread prospecting in the region during the years 1907-1908. Geological mapping in the region by the Geological Survey of Canada was undertaken during the years 1941 to 1948 and a number of precious & base-metals, coal and other

mineral occurrences were tabulated during this period (Sheppard, 1973). More recently, with the support of modern aviation and the location of often well-appointed hunting and fishing lodges in the area, access has improved. In addition, the partial construction of the BC Rail line to Dease Lake has provided additional access to the area and in spite of overall incompleteness of the rail line it is currently being used by logging concerns in the vicinity of Bear Lake and points north.

The Sustut property is one of the more intensely explored properties in the region. Kennco is credited with discovering the property in 1965 through airborne reconnaissance and stream sediment sampling. Kennco examined the property and drilled two AX holes totaling 55m, but allowed the claims to lapse. Canadian Superior staked the ground in 1968 did some minor work and then re-staked the ground in 1971. Exploration work was carried out in 1972, 73 and 76, including rock and soil sampling, geological mapping, magnetometer surveys, cat trenching, road building (presumably they also used the bulldozer to construct the airstrip at this time), and diamond drilling, which consisted of three X-ray holes (95m), two BQ holes (305m), and seven NQ holes (900m) but locations of the drill holes are not all well documented. The property was optioned out to Cities Services Minerals in 1977, who carried out additional soil sampling, geological mapping, trenching and drilled two holes (~430m). The above work was summarized by Linden (*et. al.*, 1990) and also stated that Cities' trenching produced a result of 0.39% Cu and 27.4g/t Ag over 27.5m and may have had similar results in a drill hole. The location and orientation of this trench is not known, and subsequent documented work has not produced results of similar grades and thickness.

In 1986, Placer Dome conducted exploration in the area, including stream sediment, rock and soil geochemistry and presumably results of this work led to staking claims. Placer Dome, however, optioned to property to QPX Minerals Ltd. in 1987, who carried out geochemical surveys over a 40 square kilometre area. Placer Dome conducted additional work in 1990, consisting of a soil geochemistry and geophysical survey on the north side of the mineralized area. This work indicates that gold and lead are associated with Cu and Ag anomalies but that the soil response falls off to the north. VLF surveys on the same grid indicate that mild to moderate conductors occur as a series with sub-parallel north-northeast trends, which corresponds well with observed intrusive dykes in the area. The area was relatively quiet until 1997 when Teck Resources acquired the property and carried out mapping, rock and soil (talus) sampling and re-logged the 1973 drill core. This program was followed up with 500m of hand trenching and then six holes of diamond drilling totaling 696m. Key results from the Teck drilling are listed in the table below.

All of the Teck holes were drilled with an azimuth of 300 degrees and a dip of -45 degrees and were spaced across the hillside at roughly even intervals, thereby testing almost the entire width of exposed gossanous (mineralized) area. Drill-hole 4 ended in low grade mineralization and perhaps should have been extended. The key features of the drilling indicate that Bowser Group sediments are intruded by a monzonite dyke swarm and mineralization is nearly equally distributed between the intrusive and sedimentary rocks and is mostly related to quartz-sulphide veins or crackle breccias along or adjacent to intrusive-sedimentary contacts. Drill-hole 1 is located in the center of the strongest geochemical anomaly and likely close to where Cities Services obtained their best results.

Table 1.2: Summary of Significant results from Teck's 1997 drill program on the Jake Property

Drill hole	From(m)	To (m)	Thickness	Cu%	Pb%	Zn%	Au g/t	Ag g/t
99-01	6.1	7.78	1.79				0.55	
	40.9	54.1	13.2	0.20				
	66.3	80.1	13.8	0.14				
	77.9	83.6	5.7				0.78	
	88.9	89.5	0.6			5.26		
99-02	58.25	67.12	8.87			1.35	0.7	8.98
Incl.			0.30	0.3	0.9	22.6	3.67	136.2
and			0.78			7.6	4.11	58.6
99-03	80.5	81.8	1.31		1.24	1.76	0.43	52.4
99-04	22.55	22.86	0.30		1.04	2.40		
(qz vn)	55.47	56.08	0.61	0.38			0.57	
	118.87	134.11	15.2	0.13				
99-05			No significant results					
99-06	100.03	106.89	6.86		>1	>1	1.14	>30

Electrum Resources carried out a small work program in 2007 consisting of rock, soil and stream geochemistry, this work did identify samples with elevated values, but not with potentially economic grades over mineable widths; none-the-less the authors suggest some potential for mineralization in a northerly direction (Ronning, 2007).

1.6 Current Program

A five person geology and sampling crew was based out of the Sharp Lake Ranch, just outside of Hazelton, for the period of October 6 through October 11, 2013, and flew into the Bear Lake area on a daily basis with an A-star helicopter chartered from Silver King Helicopters based in Smithers, BC. Exploration work was hampered by an early snow fall (>30cm accumulation at higher elevations). Weather conditions (visibility) prevented accessing the property area on one day, and forced a shortened time in the field on another day. Including travel time, total man-days were 26, with a total of 20 man-days of field time.

The 2013 exploration program for the Sustut Porphyry property had two objectives based on requests from the property owner: the first was to test for a north-easterly continuation of mineralization (from the drilled area) under cover using soil geochemistry; and the second was to test for the presence of mineralization on the eastern side of the Squingula River using a combination of stream and soil geochemistry. Objective one was achieved through the collection of 91, b-horizon, soil samples collected along three contour soil lines which were situated immediately northeast, and down slope from the mineralized and drilled area. The second objective was not met due to weather and safety considerations. Due to snow cover and sub-zero temperatures samplers needed to work in pairs, even

on closely spaced lines, and progress was slower than anticipated. A total of 8 man-days were expended on this survey.

2. Geology

2.1 Regional Geological Setting

The project area is situated near the central-eastern edge of the Bowser Basin, a large sedimentary basin that was deposited on Jurassic volcanic rocks of the Stikine terrane. The basin was uplifted and deformed to form the Skeena Fold Belt in Cretaceous time and, within the project area is intruded by Tertiary to Cretaceous intrusive rocks of the Katsberg and Babine plutonic suites. Source of the sediments within the Bowser stratigraphy is believed to be from the obduction of the Cache Creek terrane over Stikinia in the early middle Jurassic (Gagnon, 2010).

Rocks of the Bowser Basin are primarily middle Jurassic to mid-Cretaceous sediments deposited in wide range of environments ranging from deep-water marine to deltaic and lacustrine. Shale and argillite with interbedded sandstone form a thick succession in the western part of the project area and overlie coarse sandstone, minor conglomerate and possibly some tuffaceous rocks that may be transitional into the underlying Hazelton Group volcanic rocks, in the eastern project area. The Hazelton Group rocks within the project area are probably part of the upper Hazelton Group which is dominated by fine grained clastic rocks and lesser bi-modal rift-related volcanic rocks.

Structurally, the Bowser Basin is dominated by contractional folding and faulting (Evanchick *et. al.*, 2009). Within the project area, folds generally have a northwesterly orientation, and may be accompanied by similarly oriented thrust faults. Observed folds vary from open to tight and can be recumbent. In general, within the area of the map below, the intensity of folding appears to increase in a westerly direction or “up-section”, and/or is more visible within the Bowser sediments than the underlying Hazelton Group rocks.

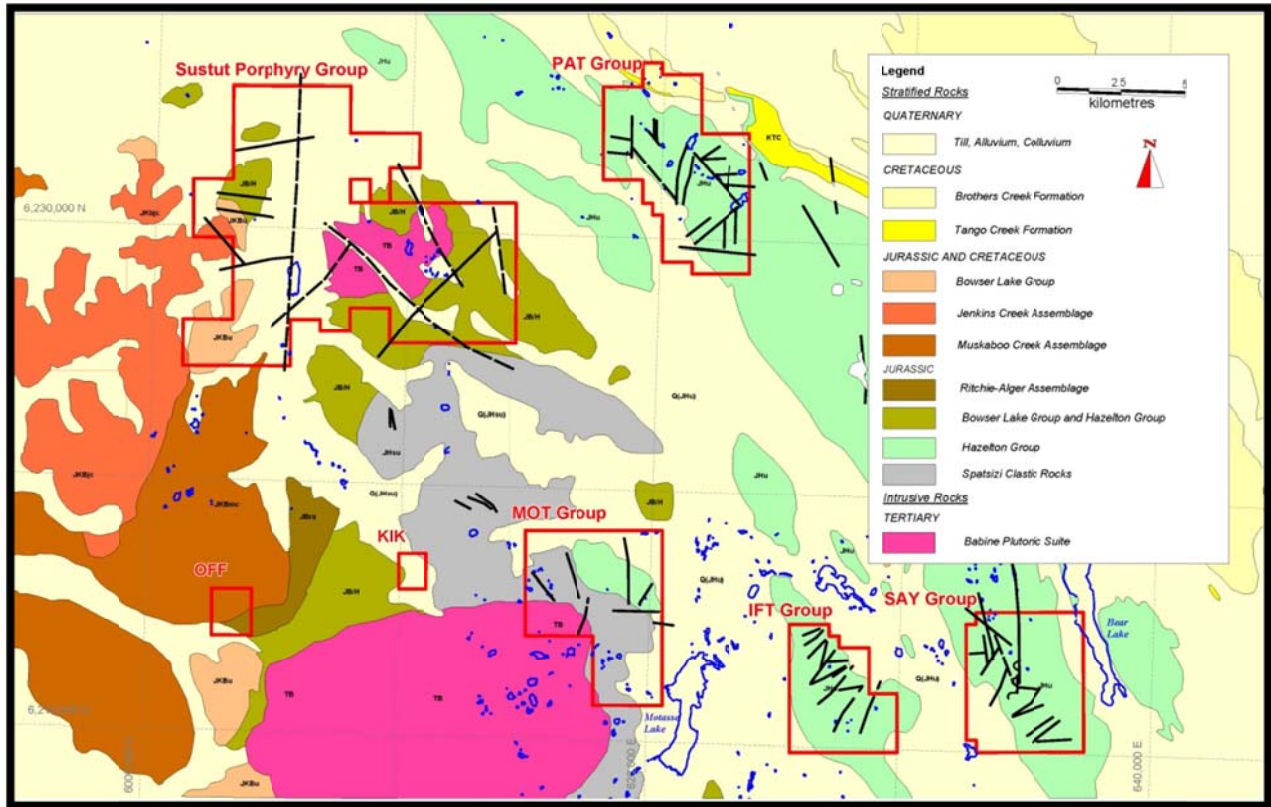


Figure 2.1 Regional Geology and Claim Group Locations (claim outlines as of Oct 2013).

The project area geology was determined by compiling information from published maps and digitizing it onto a GIS. The most current source of geology is GSC open file 5571 (Evanchick, 2007). Simplified geology is shown on Figure 2.1. The three easternmost properties are entirely underlain by undivided, lower to lower-middle Jurassic Hazelton Group rocks, consisting of: subaerial and marine, mafic, pyroclastic to epiclastic, and minor flow, volcanic rocks; with lesser felsic volcanic rocks, which include sills, dykes and welded and non-welded ignimbrite, airfall tuff breccias; epiclastic and bioclastic rocks, including volcanic debris flow, breccias, conglomerate, siltstone, shale and limestone. The western properties are more complex with rocks of both the Hazelton and Bowser Lake Groups and intrusions of the Babine Plutonic Suite. Areas of intrusion and perhaps, of iron-rich Hazelton Group rocks, are indicated on the regional aeromagnetic data (Figure 2.2). On the western side of the magnetic image (Fig. 2.2) the magnetic highs (red-yellow) colours correlate well with the presence of intrusive rocks on the regional geology map and as observed in the field. It also appears that the green colour also correlates to intrusive rocks as exposed in stream gullies (lowest elevations) and from a few spot observations it appears likely that the two magnetic highs are part of the same pluton or batholith (herein referred to as the Motase Pluton). On the eastern side of the mag image, the extreme magnetic highs (magenta) correlate with exposed intrusive rock, but high magnetic susceptibility is also indicated for the sub-area (oxidized reddish brown) pyroclastic rocks of the Hazelton Group, and more

surprisingly, flat lying sediments of the Brothers Creek Formation which forms extensive cover to the east of Bear Lake.

The Bowser Lake Group has been subdivided into eight lithological Assemblages, four each in the upper Jurassic to lower Cretaceous and Upper Middle to Upper Jurassic age ranges (Evanchick, 2009). In the vicinity of the project area the lower three, of the four younger assemblages (Upper Jurassic to Lower Cretaceous Bowser Group) and the older part of the Bowser Lake Group (Upper Middle Jurassic) consisting of the one Formation and three Assemblages, are what we would expect to encounter. A brief description taken from OF5571 is given below:

Jenkins Creek Assemblage (JKBjc): (non-marine assemblage) mudstone, siltstone, fine to medium grained sandstone, rare conglomerate and coal, commonly arranged in fining upwards cycles, sandstone is grey, green and brown weathering and fossil plants are abundant.

Skelhorne Assemblage (JKBs): (deltaic assemblage) thinly intermixed and varicoloured siltstone, sandstone and conglomerate (with or without coal), commonly arranged in coarsening and thickening upward cycles, and featuring sandstone with cross-bedding, ripples, burrows, and fossils and conglomerate that is rusty and grey weathering but constitutes a lower proportion of the sequence (15-30%) than in the Eaglenest Assemblage.

Muskaboo Assemblage (JKBmc): (shelf assemblage) sandstone, siltstone and conglomerate; primary lithofacies is sandstone forming laterally continuous thin to thick bedded sheets, less common is sandstone interbedded with siltstone and lenses of conglomerate. Sandstone is green, grey to brown weathering, thin to thick bedded and arranged in coarsening upwards cycles, abundant marine fossils; conglomerate increases in proportion and thickness upsection.

Netalzul Formation (JBn): feldspar-hornblende-porphyrific andesite flow, breccia and tuff, intercalated volcanoclastic sedimentary rocks, including volcanic debris flow. (The rocks of this formation could easily be mis-classified as part of the Hazelton Group if observed in isolation and/or after alteration, and may be present on the northern side of the MOT claim area.)

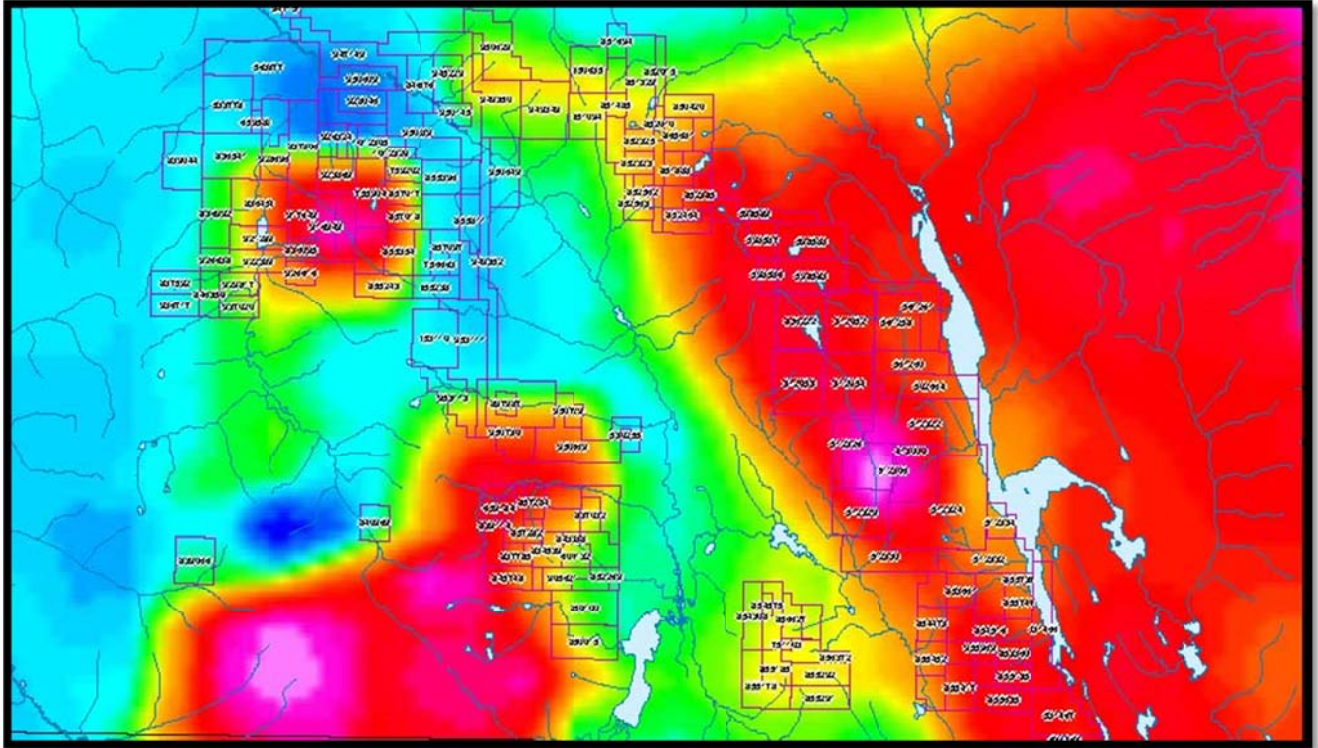


Figure 2.2: Aeromagnetic image for the Bear Lake Region

Eaglenest Assemblage (JBe): (deltaic assemblage) conglomerate, sandstone, siltstone, mudstone, and rare coal, arranged in a coarsening- and fining-upward cycles of mudstone to pebble or cobble conglomerate, prominently rusty weathering: 30 to 80% conglomerate; sheets of conglomerate up to 50m thick.

Todagin Assemblage (JBt): (slope assemblage) siltstone, fine-grained sandstone, and conglomerate; mainly laminated siltstone and/or fine-grained sandstone which is dark grey to black weathering and includes thin, orange weathering claystone beds and syndepositional faults and folds; chert pebble conglomerate occurs as lenses.

Ritchie-Alger Assemblage (JBra): (submarine fan assemblage) sandstone, siltstone, and rare conglomerate; approximately equal proportions of sheet-like intervals up to 50m thick, dominated either by siltstone, shale or very fine grained sandstone, or by medium-grained sandstone; siltstone and/or fine grained sandstone is dark grey and black weathering, sandstone is medium and light grey weathering: abundant turbidite features.

The overall similarity of rocks within the Bowser Group makes it difficult to impossible to assign Assemblages or Formations based on local traverses and/or rock descriptions found within Assessment Reports, and requires detailed mapping of significantly thick stratigraphic sections. Limited bedrock exposure at lower elevations restricts good exposures to ridge tops, which do not expose a great deal of

stratigraphy where bedding is flat to gently dipping. In general, the actual assemblage of the Bowser Group is probably irrelevant to the potential for mineralization, however, as one or more of the Assemblages is noted to have rusty weathering, this may well impact selection of areas for investigation through the use of both colour and FeO spectral imagery.

2.2 Alteration and Mineralization

A variety of mineralization has been discovered, explored and documented in the region, but most of the observed mineralization appears to be either directly related to proximal intrusions or related to some form of inferred intrusive activity. The intrusive rocks observed in the areas of mineralization exhibit a wide range of textures and possibly also composition, but are thought to be either be part of the Eocene Katsberg Plutonic Suite or older Babine Intrusions. Babine Intrusions are associated with porphyry copper deposits situated approximately 100km to the southeast along the regional northwest-southeast structural trend. The outcrop pattern as shown on the geological map suggests that the Babine intrusions in project area are early in the erosional process of being “unroofed” and therefore there may additional areas that are underlain by intrusive rocks at relatively shallow depths. The Bear property (Roste, 2008) and possibly the Jake property (Ronning, 2007; and Smith, 1999) provide evidence of the potential for copper (+/- Mo or Au) porphyry style mineralization within the district.

Mineralization in the district appears to fall into four groups: 1) copper, usually associated with relatively high silver values disseminated or as fracture fillings in Hazelton volcanic or epiclastic rocks, 2) porphyry Cu + Mo hosted in or related to feldspar or quartz-feldspar intrusions; 3) porphyry Cu-Au mineralization associated with possibly more alkaline intrusions and 4) gold vein and vein stockwork deposits. The most advanced projects in the district are the two Tommy Jack properties on the western side of the district and the Bear property on the eastern side of the district. The Tommy Jack property (reference) has been extensively drill tested and appears to be comprised of numerous narrow to broad zones of gold mineralization associated with sulphidization of sediments adjacent to a complex intrusive dyke swarm. The Bear property (Roste, 2008) has a relatively long history of drilling and has numerous drill holes with relatively long intersections of potentially economic grades within quartz and feldspar phyrlic intrusive rocks.

Colour anomalies (iron oxidation) are commonly associated with hornfelsing and pyritization of the Bowser Group sediments along contact zones with intrusions. In many areas examined in the course of this work the intrusive rock is well exposed and appears to be relatively pristine (unaltered) including at the contacts with the intruded rocks. Hornfelsing of the sediments, which may include pyritization - particularly in sandstone units and finely interbedded shale and sandstone units, can extend for 10's to 100's of metres into the sedimentary rocks. No significant mineralization was discovered, and only rare geochemically enriched samples have been obtained from these areas. The more significant mineralization (historical showings/properties) may be related to specific phases of intrusion, as it was noted that coarse-grained porphyritic phases, commonly occurring as relatively small volume dykes or,

possibly, as sills, are present within or in close proximity to the better known showings and deposits within the district.

3. Sustut-Porphry Property

3.1 Geology

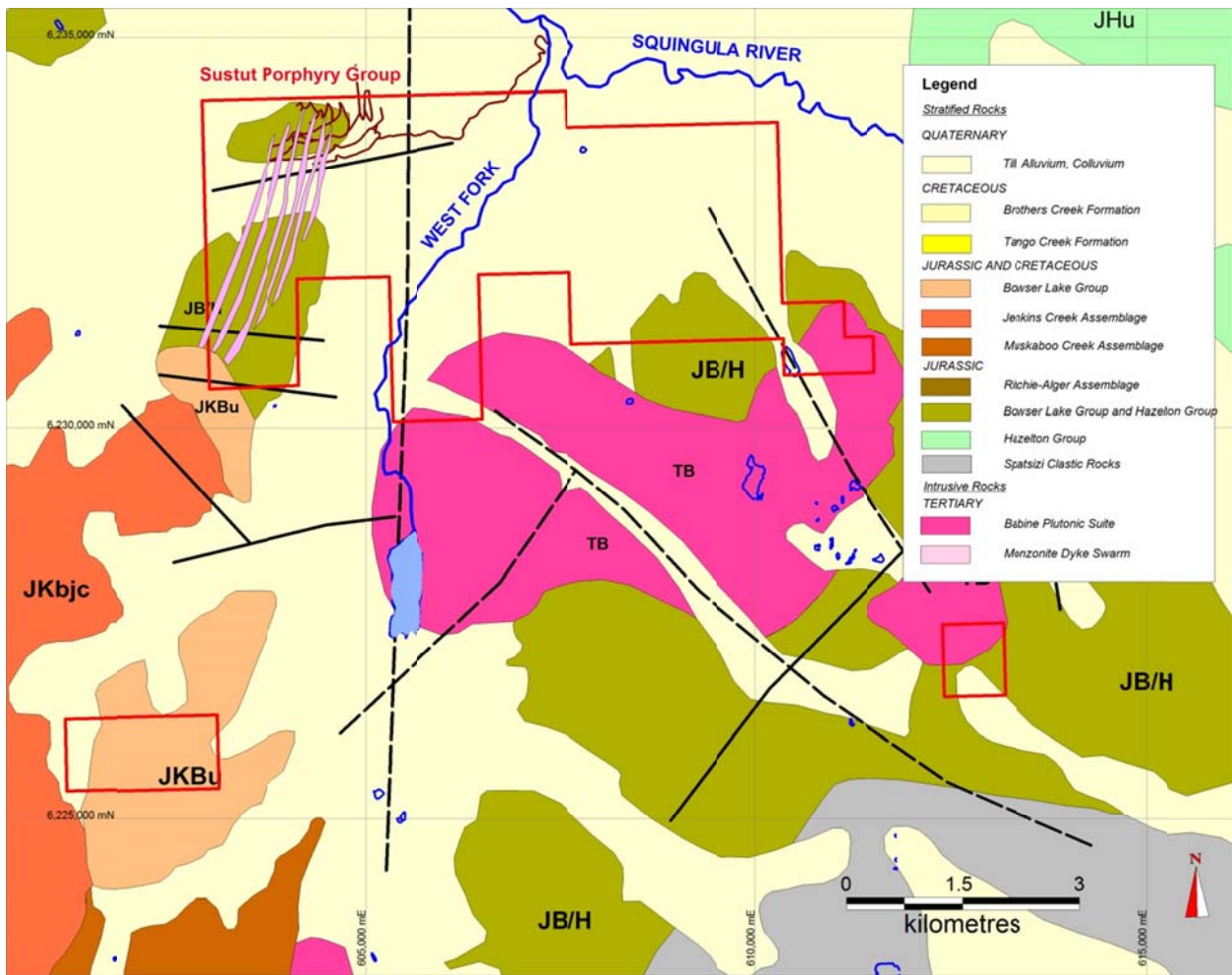


Figure 3.1. Geology (modified) of the SUSTUT Claim area (claim outline as of 01/01/14).

The general geology for the Sustut property is shown in Figure 3.1, it has been modified from the regional map (Evenchick, 2010) based on traverses undertaken in 2012. Most of the property area is underlain by sediments of the Bowser Lake and or Hazelton Groups (undifferentiated), which have been

intruded by a large diorite stock in the central part of the property area and by a swarm of monzonite dykes in the northwestern part of the property area. Hazelton and Bowser Group rocks are well exposed in the northeasterly oriented drainages on the eastern side of the property (east side of the west fork of the Squingula River) and these rocks are predominately black shale with minor interbedded sandstone and wackes giving way to green and maroon volcanic epiclastic rocks in the easternmost property area. Adjacent to the diorite intrusion the sedimentary beds are steepened to vertically dipping and appear to have been “turned-up” by forceful emplacement of the stock. On the western side of West Fork of the Squingula River, Bowser Group sediments are dipping gently (20 degrees) to the southwest. The upper part of this sequence (western side) are black to grey fine-grained, well bedded black to light grey clastic rocks that appear to be easily eroded forming rounded ridge tops and overly coarse to fine sandstone and interbedded fine conglomerate and local argillaceous horizons which have been intruded by a dyke swarm of predominately monzonite with variable textures. The dykes do not penetrate the upper shale sequence and it appears that these rocks must overly the sandstones either unconformably or possibly along a southwest dipping thrust fault. The dykes are closely spaced, appear to be vertically dipping and range in thickness from 2 to 20m and have northeasterly strikes. Grain size and texture of the dykes varies and may be related to cooling (dyke thickness) during emplacement, although comparison of hand specimens suggests that more than a single phase of intrusive is present. The sandstone-conglomerate units develop annealed grain boundaries adjacent to the dykes and in some instances it requires a very close examination to differentiate them from adjacent intrusive rocks. The black argillaceous rocks display a variety of contact effects from classic hornfels to bleaching and possibly sericitization, as exposed in Teck’s drill core. Clay alteration is conspicuous adjacent to some of the dykes on surface in areas of more intense (?) pyritization but this may be caused by supergene effects due to weathering of pyrite rather than hypogene argillic alteration typical of calc-alkaline porphyry systems. Similar observations were made in the shallow parts of some drill holes. Petrographic work included in one of Teck’s reports, suggest the presence of volcanic tuffaceous rocks but no evidence volcanic lithologies were observed in outcrop or drill core in the area of mineralization. However, volcanic detritus may be present in some of the sediments, and hornfelsing of these rocks adjacent to the dykes may have resulted in the volcanic nomenclature by the petrographer referenced by Smith (1997).

The poorly consolidated or indurated shale and siltstones sequence that overlies the “intruded” sandstones shows a complete lack of alteration or intrusion, and the moderate westerly dips suggest that these rocks may have been thrust eastwards over the mineralized areas or that the entire sequence has been tilted. In either case the shallow angle of the contact would indicate that part of the intruded and altered area is thinly buried on the ridge tops and could be covered by a thin veneer of talus along the ridge sides, thereby expanding the area that could be investigated for mineralization.

3.2 Mineralization and Alteration

Mineralization in the ‘Jake area’ consists of extensive pyrite associated with intrusive dykes which is developed both in the margins of the intrusive dykes and in the intruded sediments, as well as a much lesser amount of base-metal sulphide mineralization within quartz veinlets that cut both the intrusive

and sedimentary rocks, but predominately the sedimentary rocks. Mineralization exposed on the south ridge of the Jake gossan area is almost exclusively pyrite, which is ubiquitous, with only a few small areas where quartz veins or weak silicification occurs. Samples collected during the 2012 program and most of the samples from past work are barren to weakly anomalous with respect to base metals, and rarely yield potentially economic grades on the south-ridge part of the gossan. Historical samples from the south slope on the north ridge returned potentially economic grades from trenches and geochemical grids produced significant anomalies in copper, lead, gold and silver. Consequently it is not surprising



Plate 3.1. 'Jake' gossan, 'Sustut-Porphyry' property, looking northeast (Aug/12)

that this is where all of the past drilling took place. Mineralization and alteration is best displayed by the drill holes, as surface samples are extensively weathered. A majority of the significant assays within the drill core are associated with base-metal sulphide minerals in quartz veins (and in one drill hole what may be a quartz healed fault zone, or possibly, a crackle-breccia). Disseminated pyrite does occur within the intrusive dykes, but typically near their outer contacts. Intrusive rock observed in the lower part of DH97-04 appears to be sericite altered, and combined with some disseminated pyrite and quartz stringers, the rock shows signs of potentially porphyry style alteration over an appreciable width (>10m). Depending upon when tilting took place relative to intrusion, the north ridge is interpreted to be the highest level, or upper limits of intrusion, where one would expect the greatest flow of magmatic/hydrothermal fluids. In keeping with this interpretation, the south ridge would be at slightly greater depths of intrusive emplacement and in spite of an abundance of pyrite (mostly within the intruded sediments) the relative lack of base or precious metals here could be construed as discouraging from a "looking deeper" point of view. Thus, examination for the potential of mineralization to continue to the north-northeast is a logical strategy.



Plate 3.2. Looking north from the south ridge of the Jake gossan on the 'Sustut-Porphyry' property. On the left hand side of the photograph, overlying, west-dipping Bowser Group sediments display no evidence of mineralization or alteration. The soil survey that is the subject of this report is located just north (behind) the large gossan slide zone located just to the right of the centre of the photograph.

4. Geochemical Survey

4.1 Methods

Soil samples were primarily collected from the B horizon (depths of ~15-40cm) although in some low lying areas soils were still organic rich to depths in excess of practical dig limits and in such cases A horizon was taken. Sample holes were dug with mattocks (geo-tuls), and stations were determined with hand held GPS units. Soils were placed by hand into standard kraft bags, which were labelled by felt pen. Sample bags were air-dried and taken to Acme's prep lab in Smithers approximately one week after collection.

Further drying of the samples (at 60°C) took place at the prep-lab and then samples were sieved and the -80 mesh fraction was retained for analysis. A 0.5g subsample of the -80mesh fraction is separated from the sample and leached in hot (95°C) Aqua Regia, and then analyzed by ICP-MS methods for 32 elements including Au.

4.2 Data and Interpretation

A total of 89 soils, one silt and one rock were collected on the Jake area of the Sustut-porphyry property. The laboratory analytical reports can be found in Appendix II, and Table 4.1 contains the analytical data for the elements of interest with anomalous values highlighted in yellow and red.



Plate 4.1. Sample collection, Sustut Porphyry property

Due to the relatively small number of samples, anomalous values were selected by inspection (and experience), primarily for comparison purposes. Significantly anomalous values were deemed to be: Mo > 10 ppm; Cu > 100 and 200 ppm; Pb > 100 and 200 ppm; Zn > 200 and 400 ppm; As > 100 and 400 ppm; Fe > 6%; and Ca > 1% and are highlighted in Table 4.1 for quick reference. Sample locations and element plots are presented as Figures 4.1 to 4.3. The multi-element data indicates two primary groupings of anomalous results: the first is a Mo-Cu (+/- Au, Ag) and the second is a Pb-Zn-As (+/- Cu, Ag, Au), which are likely related to two different types of mineralization. The Mo-Cu anomalies likely reflect porphyry style mineralization, and therefore it is encouraging to see this association as it is not particularly evident in rock samples, and the Pb-Zn-As cluster likely reflects the base metal bearing quartz veinlets observed in the drill core and reflects a mineralization style that is commonly peripheral to porphyry style mineralization.

Distribution of values, particularly Cu and Mo, suggests a mineralized source area near the ridge top and down-slope dispersion of the mineralized material. The soil geochemistry does not indicate that mineralization extends north-easterly from the known mineralized area. The highest Pb-Zn-As values occur along the most north-eastern arc of the lowest elevation soil line and are somewhat suggestive of peripheral zonation in a small porphyry type system, or these values could just be proximal to a mineralized quartz vein. High values of Ca and Ba along the westernmost part of the lowest soil line may indicate the edge of the dyke swarm and/or mineralization and a return to carbonate rich sediments.

Table 4.1: Analytical results for soil sample data

ACME ANALYTICAL LABORATORIES LTD.											Final Report		Job Number:		SMI13000393			
Sample	type	Mo	Cu	Pb	Zn	Ag	Ni	Co	Mn	Fe%	As	Au	Sr	Sb	Ca%	Ba		
13JKCD45	Soil	4.0	35.7	18.3	35	1.7	5.0	2.8	68	1.60	9.7	2.3	7	0.6	0.02	65		
13JKCD46	Soil	2.0	30.1	11.8	41	1.2	6.0	3.4	95	1.57	8.1	<0.5	7	0.5	0.02	52		
13JKCD47	Soil	2.3	16.1	30.0	44	1.6	9.3	3.5	183	3.75	13.4	1.6	9	0.6	0.06	62		
13JKCD48	Soil	3.9	59.4	46.4	84	3.6	9.3	4.9	288	5.48	17.8	2.1	15	1.1	0.08	115		
13JKCD49	Soil	2.1	23.6	23.2	58	0.7	10.1	4.0	163	3.16	14.8	1.2	7	0.7	0.03	73		
13JKCD50	Soil	10.1	98.7	54.4	94	1.2	7.3	3.2	154	5.34	29.6	10.0	60	0.9	0.02	145		
13JKCD51	Soil	12.8	114.9	76.0	230	0.7	6.8	6.1	215	4.81	143.2	1.8	10	5.1	0.02	70		
13JKCD52	Soil	14.1	108.3	15.2	56	0.5	10.1	5.7	192	3.03	15.5	1.0	6	1.2	0.02	42		
13JKCD53	Soil	17.1	134.3	26.3	58	1.4	12.4	4.9	246	5.17	32.1	8.4	6	1.0	0.02	46		
13JKCD54	Soil	26.7	207.0	18.6	52	0.7	9.8	4.6	221	3.78	10.9	12.8	6	0.7	0.02	50		
13JKCD55	Soil	5.6	61.9	10.1	42	1.3	7.6	3.7	182	1.87	20.2	40.0	5	0.8	0.02	43		
13JKCD56	Soil	7.2	90.9	14.0	72	0.4	6.4	2.9	168	1.83	44.0	0.7	7	5.8	0.01	31		
13JKDD110	Soil	1.3	78.0	12.2	125	1.3	34.0	10.0	982	3.50	9.9	2.3	123	0.5	1.74	285		
13JKDD111	Soil	1.3	64.4	16.0	177	1.0	38.9	16.1	1344	4.69	12.8	2.0	105	0.5	1.33	247		
13JKDD112	Soil	1.6	82.1	14.7	99	1.8	25.8	16.1	988	3.42	12.6	1.5	186	0.5	2.45	429		
13JKDD114	Soil	1.2	18.0	11.8	51	0.2	11.2	3.9	247	2.05	8.0	<0.5	6	0.3	0.03	60		
13JKDD115	Soil	1.3	39.6	18.4	82	0.3	16.5	6.4	305	3.97	19.8	<0.5	9	0.6	0.06	111		
13JKDD116	Soil	1.4	64.8	26.4	121	0.5	17.1	9.2	638	5.41	59.9	0.9	58	1.7	0.67	519		
13JKDD117	Soil	1.6	26.1	15.5	91	0.3	16.6	7.5	468	4.19	12.9	<0.5	6	0.4	0.04	95		
13JKDD118	Soil	1.4	84.4	15.1	102	1.7	31.8	14.7	1761	3.31	10.3	1.6	106	0.3	1.01	428		
13JKDD119	Soil	2.2	84.7	22.0	81	1.4	28.0	13.4	916	5.67	18.2	0.9	166	0.5	1.57	384		
13JKDD120	Soil	1.3	134.4	18.3	130	1.5	44.1	15.1	1100	4.01	11.8	2.3	120	0.4	1.43	581		
13JKDD121	Soil	1.2	70.7	14.1	85	2.1	30.5	13.0	2736	4.14	12.6	1.0	107	0.3	1.24	638		
13JKDD122	Soil	1.3	92.8	14.3	164	2.3	45.5	12.4	1010	4.01	13.0	2.3	136	0.6	1.79	980		
13JKDD123	Soil	1.1	129.4	17.0	93	0.9	35.2	11.6	784	3.79	14.7	1.5	87	0.8	0.92	523		
13JKDD124	Soil	1.4	21.7	13.7	68	0.3	14.6	4.3	187	3.18	13.8	<0.5	8	0.4	0.07	87		
13JKDD125	Soil	1.1	24.4	12.5	60	0.2	11.2	3.9	127	2.81	11.3	<0.5	6	0.4	0.04	76		
13JKDD126	Soil	1.9	43.7	15.6	57	0.8	9.1	5.7	347	2.23	14.9	<0.5	86	0.8	1.10	515		
13JKDD127	Soil	1.4	58.7	19.1	114	0.6	34.4	12.8	684	3.81	18.2	1.3	35	0.6	0.46	398		
13JKDD128	Soil	1.3	72.7	62.3	207	2.8	24.1	12.1	1027	3.39	19.1	<0.5	120	0.8	1.58	736		
13JKDD129	Soil	1.3	41.5	21.8	64	1.2	12.7	4.6	125	2.20	15.3	<0.5	14	0.6	0.14	175		
13JKDD130	Soil	1.6	29.9	20.2	88	0.4	12.3	7.3	590	4.21	22.5	<0.5	8	0.6	0.06	132		
13JKDD131	Soil	1.4	52.1	28.4	145	0.9	25.3	9.6	711	3.60	26.9	3.0	39	0.8	0.39	262		
13JKDD132	Soil	2.2	48.5	32.4	87	0.9	8.9	5.7	205	3.84	30.9	0.7	9	1.2	0.07	89		
13JKDD133	Soil	3.3	75.2	74.3	175	1.6	21.5	10.7	1356	4.30	30.2	10.1	66	0.7	0.61	777		
13JKDD134	Soil	1.4	49.1	34.2	87	0.5	14.7	3.8	155	2.25	19.2	0.6	42	0.8	0.39	283		
13JKDD135	Soil	1.3	16.6	136.7	179	0.6	4.7	4.6	745	2.77	112.3	1.9	32	2.8	0.44	407		
13JKDD136	Soil	1.2	55.0	84.6	283	5.0	11.8	13.1	3271	4.46	130.8	6.0	45	2.9	0.49	558		
13JKDD137	Soil	1.4	53.2	184.5	611	0.6	7.8	9.3	789	5.91	147.7	1.5	8	3.8	0.07	107		
13JKDD138	Soil	2.1	124.1	175.9	702	12.8	37.0	11.3	3191	3.97	229.6	37.0	133	2.2	1.41	1259		
13JKDD139	Soil	2.6	107.3	150.0	264	2.2	13.8	6.3	458	3.39	218.5	11.4	74	2.5	0.65	476		
13JKDD140	Soil	1.5	70.8	429.1	789	3.7	28.8	18.1	2981	10.54	2173.6	41.4	10	11.0	0.13	222		
13JKDD141	Soil	1.6	30.4	112.2	224	2.2	18.3	10.2	1355	5.13	371.4	1.2	10	4.0	0.08	140		
13JKDD142	Soil	1.3	64.8	50.7	220	0.9	20.9	5.9	354	2.70	79.2	1.6	56	1.1	0.39	343		
13JKDD143	Soil	1.0	26.7	20.0	93	0.4	6.5	3.1	93	1.71	30.4	1.0	14	0.6	0.10	117		
13JKDD144	Soil	1.3	26.1	16.7	72	0.3	7.0	3.1	76	1.80	25.7	0.9	10	0.5	0.07	89		
13JKDD145	Soil	1.7	32.4	39.8	139	2.5	13.4	5.4	331	4.75	63.7	1.1	7	0.8	0.05	71		
13JKDD146	Soil	1.4	35.5	60.8	142	0.6	15.1	6.3	298	5.20	271.3	2.0	12	0.8	0.08	126		
13JKDD147	Soil	1.4	40.9	65.6	60	1.5	6.8	2.8	132	2.72	42.8	10.2	9	1.1	0.04	58		
13JKDD148	Soil	9.0	85.3	86.9	98	2.9	5.7	3.2	123	4.75	91.8	2.2	44	2.3	0.02	162		
13JKDD149	Soil	1.4	23.5	21.9	50	0.5	5.2	2.7	92	1.38	19.4	1.0	5	0.7	0.02	48		
13JKDD150	Soil	1.8	28.6	70.9	110	1.3	7.8	3.7	237	3.16	31.9	2.4	6	1.4	0.04	78		

ACME ANALYTICAL LABORATORIES LTD.				Final Report				Job Number:				SMI13000393				
Sample	type	Mo	Cu	Pb	Zn	Ag	Ni	Co	Mn	Fe%	As	Au	Sr	Sb	Ca%	Ba
13JKDD151	Soil	5.1	377.4	205.4	93	2.8	9.1	3.9	310	2.15	23.4	55.5	24	2.3	0.10	261
13JKWD15	Soil	6.2	45.4	8.6	28	0.6	5.4	2.1	56	1.01	7.0	5.0	6	0.4	0.03	77
13JKWD16	Soil	40.9	76.4	106.5	52	7.2	10.6	3.7	193	7.70	32.9	26.6	33	1.8	0.05	188
13JKWD17	Soil	1.5	16.2	9.6	31	7.4	4.5	1.8	81	0.85	6.1	0.7	12	0.4	0.12	100
13JKWD18	Soil	2.0	35.6	17.3	60	2.2	15.3	4.9	252	5.14	14.3	1.7	7	0.6	0.03	52
13JKWD19	Soil	4.0	37.5	21.9	68	0.4	7.5	2.9	92	1.76	11.7	1.1	17	1.0	0.11	128
13JKWD20	Soil	21.9	259.9	125.3	186	1.4	9.4	5.7	272	5.45	76.9	10.3	29	4.3	0.03	201
13JKWD21	Soil	3.5	31.1	41.1	37	0.6	2.2	1.5	67	0.86	16.7	0.7	7	2.7	0.05	67
13JKWD22	Soil	27.6	243.2	34.6	86	1.0	9.7	8.1	406	2.99	27.1	7.8	7	2.1	0.03	74
13JKWD23	Soil	16.6	305.8	35.9	79	2.1	6.7	5.3	542	3.33	47.5	79.7	14	9.0	0.09	247
13JKWD24	Soil	9.0	43.7	8.8	35	0.1	6.6	2.8	131	1.45	19.9	0.9	5	0.7	0.02	80
13JKWD41	Soil	1.9	60.7	30.0	97	1.4	16.4	16.2	3640	2.65	145.1	6.3	52	1.2	0.52	906
13JKWD42	Soil	2.1	43.2	43.5	92	0.9	8.6	5.5	416	2.73	145.8	2.2	15	2.3	0.07	141
13JKWD43	Soil	1.3	19.1	11.9	47	0.8	8.7	3.6	174	2.28	31.7	1.0	8	0.4	0.05	49
13JKWD44	Soil	1.8	26.8	36.1	79	1.5	7.5	3.8	176	2.95	108.3	1.2	8	1.5	0.02	105
13JKWD45	Soil	1.1	106.5	37.7	153	1.8	19.6	3.9	172	1.37	26.1	2.9	55	0.5	0.41	706
13JKWD46	Soil	1.1	19.2	16.0	62	0.7	16.1	5.1	209	4.02	14.3	1.3	5	0.3	0.04	73
13JKWD47	Soil	1.1	15.6	8.5	33	0.8	4.8	2.6	74	1.18	14.4	1.5	5	0.3	0.03	46
13JKWD48	Soil	1.5	34.1	19.4	55	0.6	4.8	2.8	118	1.55	20.6	2.8	9	0.5	0.08	76
13JKWD49	Soil	1.5	91.3	21.7	84	0.9	15.6	5.4	305	5.33	22.1	2.2	6	0.5	0.03	63
13JKWD50	Soil	5.6	69.8	16.3	56	0.6	5.2	2.9	85	2.39	15.2	4.7	8	0.4	0.02	83
13JKWD51	Soil	11.7	109.3	22.7	30	1.5	4.1	1.6	47	2.39	12.7	7.4	12	0.4	0.02	109
13JKWD52	Soil	2.7	262.3	36.2	60	8.1	9.4	3.7	167	6.04	19.2	11.9	14	0.8	0.03	70
13JKBD46	Soil	4.8	11.9	4.1	10	0.3	2.5	1.1	22	0.40	2.5	1.5	5	0.1	0.01	52
13JKBD47	Soil	10.0	40.3	5.9	16	0.2	2.7	2.3	184	0.57	4.5	<0.5	6	0.2	0.03	52
13JKBD48	Soil	10.3	243.8	18.5	39	0.7	8.7	7.2	151	1.49	21.4	0.6	10	0.4	0.06	120
13JKBD49	Soil	9.2	278.1	22.9	53	0.5	10.7	12.3	481	2.45	10.5	0.8	13	0.4	0.10	180
13JKBD50	Soil	4.3	303.1	51.7	78	0.3	13.4	7.4	536	2.88	18.9	<0.5	13	0.8	0.07	260
13JKBD51	Soil	1.3	19.5	10.6	44	0.2	12.9	4.5	203	3.41	10.8	<0.5	4	0.3	0.03	43
13JKBD52	Soil	1.4	138.2	11.9	134	0.1	27.4	9.1	728	3.14	9.6	1.6	31	0.2	0.37	784
13JKBD53	Soil	1.3	29.9	16.1	66	0.4	15.6	5.8	324	3.87	17.4	<0.5	6	0.4	0.06	74
13JKBD54	Soil	1.4	24.0	9.8	50	0.3	10.1	4.3	173	2.49	11.5	<0.5	6	0.3	0.05	111
13JKBD55	Soil	1.6	32.2	13.4	48	1.0	9.9	6.1	196	3.73	48.8	<0.5	10	0.9	0.02	84
13JKBD56	Soil	4.2	186.0	26.8	115	0.5	12.5	9.0	631	3.86	111.1	0.8	14	1.9	0.12	248
13JKBD57	Soil	5.5	52.0	20.0	66	0.5	9.9	6.4	320	3.59	38.3	<0.5	6	0.9	0.07	100
13JKBD58	Soil	7.9	46.7	13.9	68	0.6	11.2	4.3	165	2.65	17.0	<0.5	8	0.5	0.07	145
13JKBD59	Soil	8.2	141.9	19.3	95	0.3	19.9	5.8	204	3.90	23.0	<0.5	13	0.4	0.11	262
13JKBD60	Soil	1.8	20.3	16.3	56	0.3	8.5	4.1	408	2.31	15.8	<0.5	5	0.4	0.03	59

Note: Sample number sequence is as follows: year (13), location (JK), sampler (W=Wiess, B=Benoit, C=Coggins, D=Daubeny), sample type (D= soil, S =silt, R= rock, M = moss mat), plus sample number.

5. Conclusions and Recommendations

The only significant mineralization we have observed on the SUSTUT claim group appears to be restricted to the north ridge of the historic Jake gossan area. The Jake gossan area is exposed on two north-easterly trending ridge spurs and the area is centered on an intrusive dyke swarm. The dykes are interpreted to be of mostly monzonite composition with variable grain sizes which may reflect dyke thickness and cooling or could reflect multiple intrusive events. The dykes occur in a parallel, north-north-easterly trending swarm with a strike length of about seven kilometers. The dykes intrude argillite, sandstone, wackes and fine conglomerates of the Bowser Lake Group and pyrite is extensively developed in both rock types along the intrusive-sedimentary contacts. Quartz veining +/- base metal sulphide mineralization appears to be restricted the northern end of the dyke swarm, and based on the soil geochemical survey reported herein, does not extend far beyond the drilled area.

The relative lack of evidence for base metal mineralization in the better exposed south ridge of the Jake gossan area is discouraging. The length of the dykes and relative abundance suggest emplacement by the upper reaches of a reasonably large intrusion, commonly a very good place to search for mineralization. However, in spite of extensive pyritization of the intruded sediments, geochemical indicators of a productive porphyry system are very weak and essentially only concentrated in the northernmost part of the dykes (north ridge showing). Although there are some areas of the property that could host intrusive rocks (and related porphyry style mineralization) which are covered by either talus and/or forest and have not yet been tested by geochemical or geophysical methods, the bulk of historical, and more recent, geological and geochemical data do not indicate a large enough area of “productive” or mineralized rock for the generating a potentially economic copper porphyry deposit, and therefore it is difficult to recommend further work.

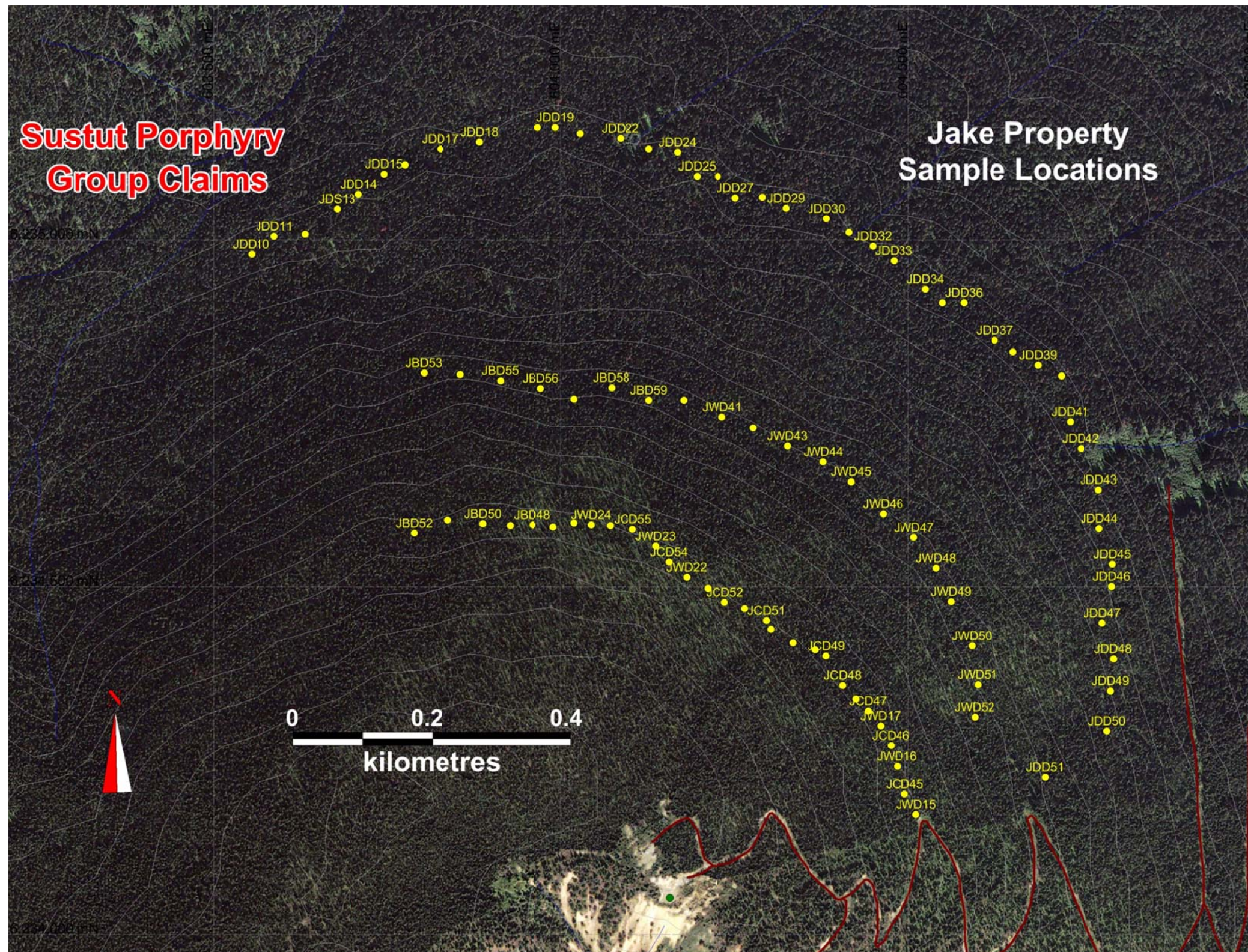


Figure 4.1: Soil Sample Location plan on airphoto. Note that sample numbers have been shortened so that 13JKWD18 has been shortened to JWD18.

Additionally samples JDD10 to 51 correspond to samples 13JKDD110 to 151.

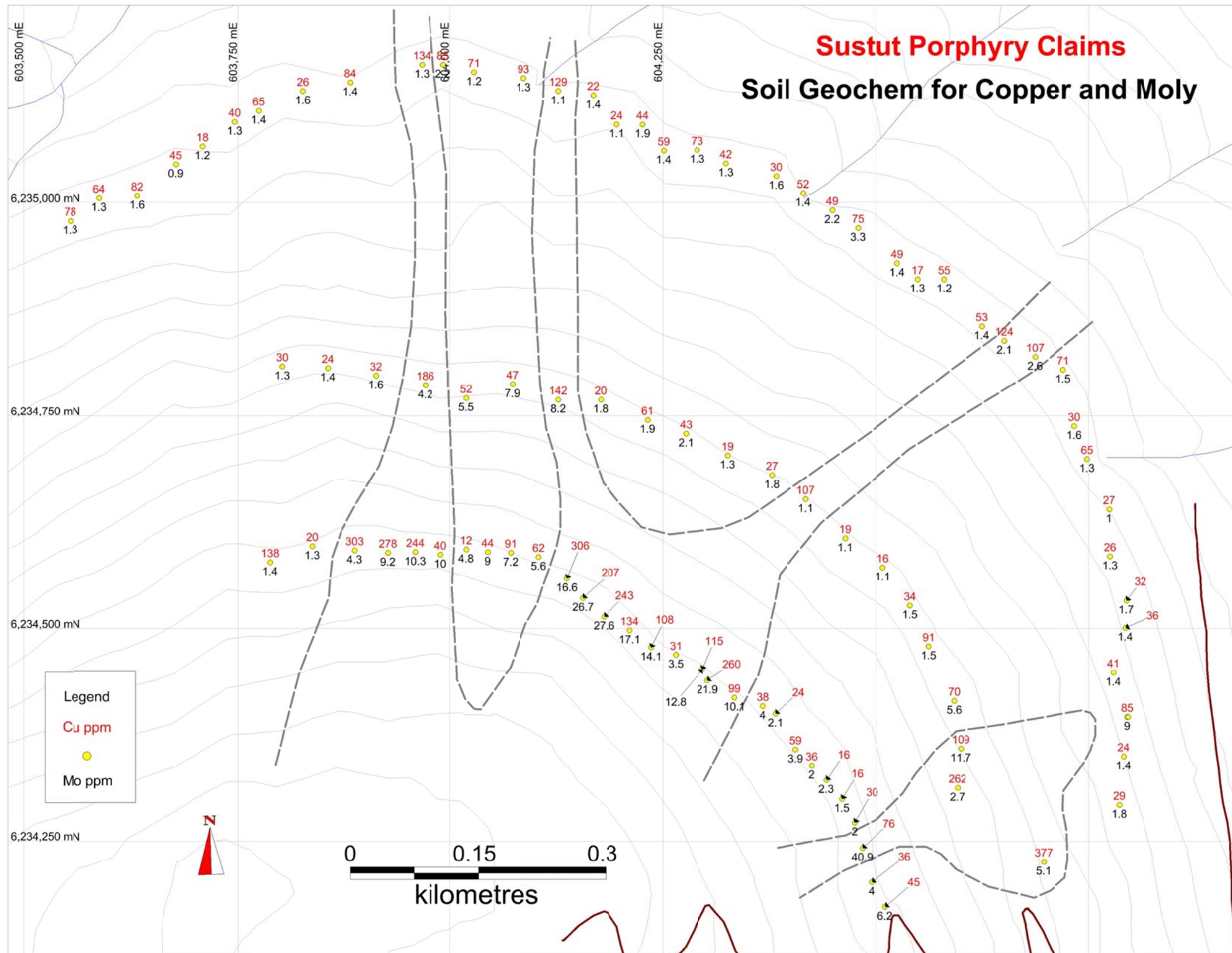


Figure 4.2: Soil geochemistry with Cu and Mo values. +100Cu values or Mo+Cu>100 have been contoured.

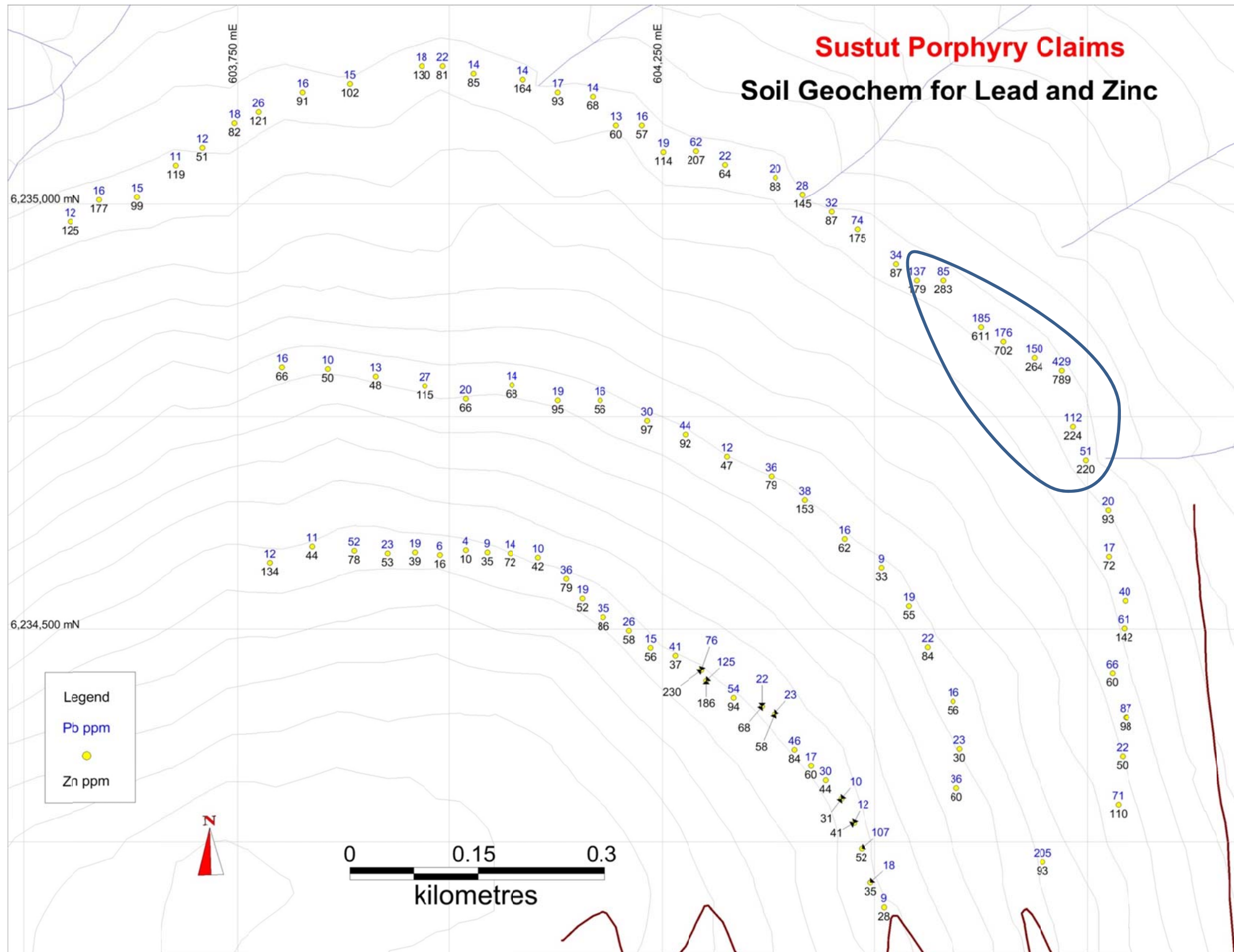


Figure 4.3: Soil geochemical values for Pb and Zn. Pb+Zn > 300ppm have been outlined.

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APPENDIX I: Sample Descriptions

Sample Number	Easting	Northing	Comments
13JKWD15	604511	6234173	light brown soil right next to switchback, tiny charcoil pieces, 20cm
13JKWD16	604484	6234242	Forested, red-brown light soil, organic rich, 20cm depth
13JKWD17	604460	6234300	dark brown soil, tiny charcoil pieces, 20cm
13JKWD18	604425	6234339	Rusty brown-yellowish brown soil, 20cm depth, forested
13JKWD19	604367	6234409	grey/brown fine, sticky soil, 15cm
13JKWD20	604302	6234439	light brown heavy organics, 20cm depth with some pebbles
13JKWD21	604265	6234469	beige crumbly soil, big rocks and roots to get past, 15cm
13JKWD22	604181	6234514	light brown, abundant alder roots and organics, 20cm depth
13JKWD23	604137	6234559	brown soil, rocks and roots to get past, 15cm
13JKWD24	604044	6234590	light brown, coarse organics and pebbles
13JKBD46	604019	6234593	light brown crumbly soil, some roots, bushes and trees, 15cm down
13JKBD47	603989	6234587	light brown crumbly soil, some roots, 15cm
13JKBD48	603959	6234590	light brown, roots and pebbles, skinny trees, 10cm
13JKBD49	603927	6234589	light brown, roots, tall trees, steep slope, 25cm
13JKBD50	603888	6234592	light brown, roots, picked out some pebbles, 20cm
13JKBD51	603838	6234597	brown/orange sticky soil, lots of roots, tall trees
13JKBD52	603789	6234578	light brown somewhat sticky soil, tall trees, 15cm
13JKBD53	603803	6234808	light brown crumbly soil, some roots, tall trees, 15cm
13JKBD54	603856	6234806	reddish brown crumbly soil, some roots, 20cm
13JKBD55	603913	6234797	reddish brown soil, lots of rocks to get past, some roots, 15cm
13JKBD56	603971	6234786	light brown soil with yellow lichen, pebbles and roots, 15cm
13JKBD57	604019	6234771	medium brown, some roots, few pebbles, 15cm
13JKBD58	604073	6234787	medium brown reddish soil, good soil, not many pebbles and roots
13JKBD59	604127	6234769	light brown soil, some roots, 15cm
13JKBD60	604177	6234769	yellowish brown sticky soil, lots of pebbles, 20cm
13JKWD41	604232	6234745	medium brown crumbly soil, lots of pebbles and roots, 20cm
13JKWD42	604277	6234729	light brown/reddish soil, roots, rocks below, 20cm
13JKWD43	604326	6234703	light brown/beige soil, lots of organics, 20cm
13JKWD44	604378	6234680	medium brown/reddish soil, somewhat sticky, good soil, 15cm
13JKWD45	604418	6234652	medium to dark brown soil, roots, 15cm
13JKWD46	604464	6234606	brown/orange soil, roots and pebbles, 20cm
13JKWD47	604508	6234572	medium brown crumbly soil, some roots, rocks beneath, 15cm
13JKWD48	604540	6234527	medium brown crumbly soil, picked out lots of angular, 25cm pebbles
13JKWD49	604562	6234479	brown/orange very crumbly soil, some pebbles, 20cm
13JKWD50	604592	6234415	brown/beige really loose/dry soil, 15cm
13JKWD51	604600	6234359	medium brown soil, picked out lots of pebbles, 15cm
13JKWD52	604596	6234313	brown/orange somewhat sticky soil, some pebbles, 15cm

13JKDD119		603992	6235162	Gray clay, 40-cm pit
13JKDD120	DIRT	603967	6235162	Gray clay, 40-cm deep, wet
13JKDD121	DIRT	604028	6235153	gray clay, minor yellow coloration, 40-cm pit
13JKDD122	DIRT	604086	6235146	gray clay, 40-cm pit
13JKDD123	DIRT	604127	6235131	gray clay, 40-cm pit
13JKDD124	DIRT	604168	6235126	Medium brown/orange, 20-cm pit
13JKDD125	DIRT	604196	6235092	Med brown/gray, occasional rock
13JKDD126	DIRT	604226	6235092	Gray, occasional rock, 40-cm pit
13JKDD127	DIRT	604251	6235061	30-cm pit. Medium brown/gray, occasional rock
13JKDD128	DIRT	604290	6235062	Dark gray, clay rich, 40-cm pit.
13JKDD129	DIRT	604324	6235046	Med gray/brown, pebbles, 35-cm pit
13JKDD130	DIRT	604383	6235031	Medium orange/brown, shale pebbles, 25-cm pit.
13JKDD131	DIRT	604415	6235011	Brown/gray clay, 15-cm pit
13JKDD132	DIRT	604449	6234991	Brown, few pebbles, 25-cm pit.
13JKDD133	DIRT	604479	6234970	15-cm medium brown, occasional pebble.
13JKDD134	DIRT	604525	6234929	30-cm med brown, pebbles.
13JKDD135	DIRT	604549	6234910	Medium brown, occasional pebble, 20-cm pit.
13JKDD136	DIRT	604580	6234910	Med brown/red, occasional pebble, 20-cm pit.
13JKDD137	DIRT	604625	6234855	Medium brown, 20-cm pit, diorite porphyry outcrop
13JKDS138	SILT	604651	6234838	Low flow, moderate gradient, silt & clay
13JKDD139	DIRT	604687	6234819	Medium brown, 20-cm pit, pebbles.
13JKDD140	DIRT	604720	6234804	Medium brown soil from overturned tree.
13JKDD141	DIRT	604733	6234738	Medium brown, pebbles, 30-cm pit
13JKDD142	DIRT	604748	6234699	Medium brown, pebbles, 25-cm pit
13JKDD143	DIRT	604774	6234640	Medium brown, pebbles, 18-cm pit
13JKDD144	DIRT	604775	6234585	Medium brown, shale pebbles, 25-cm pit
13JKDD145	DIRT	604794	6234533	reddish soil, pebbles, 20-cm pit.
13JKDD146	DIRT	604793	6234501	Light brown, base of tree root, sandstone cobbles
13JKDD147	DIRT	604779	6234448	Gray, pebbles, 18-cm pit
13JKDD148	DIRT	604795	6234396	Medium to light brown, pebbles, 15-cm pit.
13JKDD149	DIRT	604791	6234350	Light gray brown, 18-cm pit with pebbles
13JKDD150	DIRT	604786	6234293	Brown soil, pebbles, 15-cm pit.
13JKDD151	DIRT	604697	6234226	Light gray brown, 15-cm pit with pebbles
13JKDD152	ROCK	604796	6234396	Hematite altered weathering rind, brown altered (weathered) matrix, medium - grained limonite altered hornblende porphyry

Appendix II: Statement of Costs

1.) Professional Services: (Oct 6th to Oct 12th, 2013)

P. Daubeny: 6 Days @ 500/day	\$3,000.00
A. Wiess: 5.2 Days, @ 400/day (+180.40 for mileage)	\$2,260.40
B. Benoit: 7 Days @375/day	\$2,625.00
P. Holbek: 2.5 days @ 1100/day	\$2,750.00
R. Coggins (sampler): 7 days @ 275/day	\$1,925.00
Sub total	<u>\$12,560.40</u>

2.) Travel:

Airfare: 2 Smithers –Vancouver return, 1 flight Kelowna-Van-Smithers Return:	2,807.60
Truck rental and mileage:	980.00

3.) Food and Accommodation

Sharp Creek Ranch: 24 mandays @ \$80/day	1,920.00
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4.) Analytical

Acme Analytical	4,116.49
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5.) Helicopter

Silver King Helicopters (Smithers) 11.6 hrs	<u>18,840.18</u>
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Sub total	41,224.67
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40% of costs allocated to Sustut Porphyry Property =	16,489.87
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Report Preparation	<u>1,500.00</u>
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Total Expenditures:	\$17,990.00
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Appendix III: Certificate of Qualifications

I, Peter M. Holbek with a business address of 1700 – 700 West Pender Street, Vancouver, British Columbia, V6C 1G8, do hereby certify that:

1. I am a professional geologist registered under the Professional Engineers and Geoscientists Act of the Province of British Columbia and a member in good standing with the Association of Professional Engineers and Geoscientists of British Columbia.
2. I am a graduate of The University of British Columbia with a B.Sc. in geology 1980 and an M.Sc. in geology, 1988.
3. I have practiced my profession continuously since 1980.
4. I am Vice President, Exploration for Copper Mountain Mining Corp. having a business address as given above.
5. I supervised and directed the work program on the Bear Lake properties, including research and compilation, field preparation, field work and report preparation.

Signed

Peter Holbek, M.Sc., P.Geo.

I, Richard J Joyes with a business address of 1700 – 700 West Pender Street, Vancouver, British Columbia, V6C 1G8, do hereby certify that:

1. I am a graduate of The University of Tasmania with a B.Sc. in geology 2000
2. I have practiced my profession continuously since 2000.
3. I am an exploration geologist, for Copper Mountain Mining Corp. having a business address as given above.
4. I assisted in supervising and conducting the work programs on the Bear Lake properties, and assisted in preparing this report.

Signed

Richard J Joyes B.Sc Geo.

Appendix IV: Assay Certificates



www.acmelab.com

Acme Analytical Laboratories (Vancouver) Ltd.
9050 Shaughnessy St Vancouver BC V6P 6E5 CANADA
PHONE (604) 253-3158

Client: **Copper Mountain Mining Corporation**
1700 - 700 West Pender St.
Vancouver BC V6G 1G8 CANADA

Submitted By: Peter Holbek
Receiving Lab: Canada-Smithers
Received: October 15, 2013
Report Date: October 29, 2013
Page: 1 of 4

CERTIFICATE OF ANALYSIS

SMI13000393.1

CLIENT JOB INFORMATION

Project: None Given
Shipment ID:
P.O. Number
Number of Samples: 90

SAMPLE DISPOSAL

RTRN-PLP Return
DISP-RJT-SOIL Immediate Disposal of Soil Reject

Acme does not accept responsibility for samples left at the laboratory after 90 days without prior written instructions for sample storage or return.

Invoice To: Copper Mountain Mining Corporation
1700 - 700 West Pender St.
Vancouver BC V6G 1G8
CANADA

CC:

SAMPLE PREPARATION AND ANALYTICAL PROCEDURES

Procedure Code	Number of Samples	Code Description	Test Wgt (g)	Report Status	Lab
Dry at 60C	90	Dry at 60C			SMI
SS80	90	Dry at 60C sieve 100g to -80 mesh			SMI
1DX1	90	1:1:1 Aqua Regia digestion ICP-MS analysis	0.5	Completed	VAN

ADDITIONAL COMMENTS



This report supersedes all previous preliminary and final reports with this file number dated prior to the date on this certificate. Signature indicates final approval; preliminary reports are unsigned and should be used for reference only. All results are considered the confidential property of the client. Acme assumes the liabilities for actual cost of analysis only. Results apply to samples as submitted. *** asterisk indicates that an analytical result could not be provided due to unusually high levels of interference from other elements.

CERTIFICATE OF ANALYSIS

SMI13000393.1

Method	Analyte	1DX Mo	1DX Cu	1DX Pb	1DX Zn	1DX Ag	1DX Ni	1DX Co	1DX Mn	1DX Fe	1DX As	1DX Au	1DX Th	1DX Sr	1DX Cd	1DX Sb	1DX Bi	1DX V	1DX Ca	1DX P	1DX La
Unit	MDL	ppm	ppm	ppm	ppm	ppm	ppm	ppm	ppm	%	ppm	ppb	ppm	ppm	ppm	ppm	ppm	ppm	%	%	ppm
		0.1	0.1	0.1	1	0.1	0.1	0.1	1	0.01	0.5	0.5	0.1	1	0.1	0.1	0.1	2	0.01	0.001	1
13JKCD45	Soil	4.0	35.7	18.3	35	1.7	5.0	2.8	68	1.60	9.7	2.3	<0.1	7	0.2	0.6	0.5	49	0.02	0.045	7
13JKCD46	Soil	2.0	30.1	11.8	41	1.2	6.0	3.4	95	1.57	8.1	<0.5	<0.1	7	0.4	0.5	0.2	46	0.02	0.052	5
13JKCD47	Soil	2.3	16.1	30.0	44	1.6	9.3	3.5	183	3.75	13.4	1.6	<0.1	9	0.1	0.6	0.3	71	0.06	0.138	5
13JKCD48	Soil	3.9	59.4	46.4	84	3.6	9.3	4.9	288	5.48	17.8	2.1	<0.1	15	0.7	1.1	0.5	68	0.08	0.118	5
13JKCD49	Soil	2.1	23.6	23.2	58	0.7	10.1	4.0	163	3.16	14.8	1.2	<0.1	7	0.2	0.7	0.4	58	0.03	0.145	6
13JKCD50	Soil	10.1	98.7	54.4	94	1.2	7.3	3.2	154	5.34	29.6	10.0	0.3	60	0.2	0.9	1.9	76	0.02	0.180	8
13JKCD51	Soil	12.8	114.9	76.0	230	0.7	6.8	6.1	215	4.81	143.2	1.8	0.9	10	0.2	5.1	1.3	75	0.02	0.121	18
13JKCD52	Soil	14.1	108.3	15.2	56	0.5	10.1	5.7	192	3.03	15.5	1.0	0.1	6	0.1	1.2	0.5	72	0.02	0.070	6
13JKCD53	Soil	17.1	134.3	26.3	58	1.4	12.4	4.9	246	5.17	32.1	8.4	0.4	6	0.1	1.0	0.4	69	0.02	0.233	8
13JKCD54	Soil	26.7	207.0	18.6	52	0.7	9.8	4.6	221	3.78	10.9	12.8	0.1	6	0.2	0.7	0.5	95	0.02	0.102	6
13JKCD55	Soil	5.6	61.9	10.1	42	1.3	7.6	3.7	182	1.87	20.2	40.0	<0.1	5	<0.1	0.8	0.4	46	0.02	0.075	5
13JKCD56	Soil	7.2	90.9	14.0	72	0.4	6.4	2.9	168	1.83	44.0	0.7	<0.1	7	0.1	5.8	0.5	48	0.01	0.062	6
13JKDD110	Soil	1.3	78.0	12.2	125	1.3	34.0	10.0	982	3.50	9.9	2.3	0.4	123	1.0	0.5	0.2	41	1.74	0.147	24
13JKDD111	Soil	1.3	64.4	16.0	177	1.0	38.9	16.1	1344	4.69	12.8	2.0	0.6	105	0.4	0.5	0.2	51	1.33	0.134	15
13JKDD112	Soil	1.6	82.1	14.7	99	1.8	25.8	16.1	988	3.42	12.6	1.5	0.4	186	0.4	0.5	0.2	42	2.45	0.137	23
13JKDD114	Soil	1.2	18.0	11.8	51	0.2	11.2	3.9	247	2.05	8.0	<0.5	<0.1	6	0.1	0.3	0.2	51	0.03	0.058	3
13JKDD115	Soil	1.3	39.6	18.4	82	0.3	16.5	6.4	305	3.97	19.8	<0.5	0.1	9	0.4	0.6	0.2	58	0.06	0.077	5
13JKDD116	Soil	1.4	64.8	26.4	121	0.5	17.1	9.2	638	5.41	59.9	0.9	0.4	58	0.2	1.7	0.1	62	0.67	0.076	33
13JKDD117	Soil	1.6	26.1	15.5	91	0.3	16.6	7.5	468	4.19	12.9	<0.5	0.2	6	0.3	0.4	0.2	70	0.04	0.143	3
13JKDD118	Soil	1.4	84.4	15.1	102	1.7	31.8	14.7	1761	3.31	10.3	1.6	0.4	106	1.3	0.3	0.1	48	1.01	0.124	50
13JKDD119	Soil	2.2	84.7	22.0	81	1.4	28.0	13.4	916	5.67	18.2	0.9	0.8	166	0.8	0.5	0.2	63	1.57	0.130	25
13JKDD120	Soil	1.3	134.4	18.3	130	1.5	44.1	15.1	1100	4.01	11.8	2.3	1.0	120	1.6	0.4	0.2	45	1.43	0.124	34
13JKDD121	Soil	1.2	70.7	14.1	85	2.1	30.5	13.0	2736	4.14	12.6	1.0	0.6	107	0.8	0.3	0.1	54	1.24	0.073	34
13JKDD122	Soil	1.3	92.8	14.3	164	2.3	45.5	12.4	1010	4.01	13.0	2.3	0.7	136	1.5	0.6	0.1	44	1.79	0.145	16
13JKDD123	Soil	1.1	129.4	17.0	93	0.9	35.2	11.6	784	3.79	14.7	1.5	0.9	87	0.5	0.8	0.2	44	0.92	0.089	21
13JKDD124	Soil	1.4	21.7	13.7	68	0.3	14.6	4.3	187	3.18	13.8	<0.5	<0.1	8	0.3	0.4	0.2	62	0.07	0.148	3
13JKDD125	Soil	1.1	24.4	12.5	60	0.2	11.2	3.9	127	2.81	11.3	<0.5	<0.1	6	0.3	0.4	0.1	62	0.04	0.115	3
13JKDD126	Soil	1.9	43.7	15.6	57	0.8	9.1	5.7	347	2.23	14.9	<0.5	0.2	86	0.4	0.8	0.2	41	1.10	0.065	8
13JKDD127	Soil	1.4	58.7	19.1	114	0.6	34.4	12.8	684	3.81	18.2	1.3	0.8	35	0.5	0.6	0.2	47	0.46	0.063	15
13JKDD128	Soil	1.3	72.7	62.3	207	2.8	24.1	12.1	1027	3.39	19.1	<0.5	0.6	120	1.3	0.8	0.2	43	1.58	0.100	40

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Method	Analyte	Unit	MDL	1DX	1DX	1DX	1DX	1DX	1DX	1DX	1DX	1DX	1DX	1DX	1DX	1DX			
				Cr	Mg	Ba	Ti	B	Al	Na	K	W	Hg	Sc	Tl	S	Ga	Se	Te
				ppm	%	ppm	%	ppm	%	%	ppm	ppm	ppm	ppm	%	ppm	ppm		
				1	0.01	1	0.001	20	0.01	0.001	0.01	0.1	0.01	0.1	0.05	1	0.5	0.2	
13JKCD45	Soil			4	0.04	65	0.007	<20	0.72	0.004	0.03	<0.1	0.04	0.8	0.1	<0.05	6	<0.5	<0.2
13JKCD46	Soil			7	0.04	52	0.004	<20	0.70	0.004	0.03	<0.1	0.03	0.3	<0.1	<0.05	5	<0.5	<0.2
13JKCD47	Soil			14	0.12	62	0.012	<20	1.26	0.004	0.04	0.2	0.08	0.9	0.1	<0.05	8	0.6	<0.2
13JKCD48	Soil			15	0.09	115	0.010	<20	1.27	0.007	0.05	0.1	0.09	1.6	<0.1	0.07	7	<0.5	<0.2
13JKCD49	Soil			13	0.11	73	0.009	<20	1.09	0.004	0.03	0.1	0.04	1.1	0.1	<0.05	6	<0.5	<0.2
13JKCD50	Soil			11	0.06	145	0.006	<20	1.27	0.063	0.08	<0.1	0.03	1.8	0.2	0.28	6	<0.5	0.7
13JKCD51	Soil			6	0.03	70	0.002	<20	0.73	0.002	0.03	0.1	0.06	1.7	0.2	<0.05	5	<0.5	0.6
13JKCD52	Soil			11	0.07	42	0.010	<20	1.01	0.005	0.03	0.1	0.03	2.3	0.1	<0.05	8	<0.5	<0.2
13JKCD53	Soil			17	0.18	46	0.011	<20	1.40	0.003	0.04	0.2	0.07	2.8	0.2	<0.05	8	0.5	<0.2
13JKCD54	Soil			14	0.08	50	0.010	<20	1.35	0.003	0.05	<0.1	0.07	2.6	0.1	<0.05	8	<0.5	0.2
13JKCD55	Soil			9	0.04	43	0.007	<20	0.72	0.003	0.03	0.1	0.04	0.4	0.2	<0.05	6	<0.5	<0.2
13JKCD56	Soil			5	0.03	31	0.004	<20	0.70	0.003	0.03	0.1	0.04	0.4	0.3	<0.05	6	<0.5	<0.2
13JKDD110	Soil			21	0.40	285	0.003	<20	1.78	0.008	0.08	<0.1	0.30	6.2	0.2	0.08	4	1.1	<0.2
13JKDD111	Soil			24	0.47	247	0.003	<20	2.00	0.008	0.08	<0.1	0.23	7.8	0.2	<0.05	5	1.1	<0.2
13JKDD112	Soil			18	0.33	429	0.003	<20	1.66	0.008	0.07	<0.1	0.47	5.2	0.3	0.08	4	2.6	<0.2
13JKDD114	Soil			11	0.04	60	0.005	<20	0.73	0.006	0.03	0.1	0.03	0.6	0.1	<0.05	5	<0.5	<0.2
13JKDD115	Soil			18	0.15	111	0.008	<20	1.33	0.006	0.04	<0.1	0.12	2.3	0.1	<0.05	5	<0.5	<0.2
13JKDD116	Soil			15	0.19	519	0.003	<20	1.10	0.005	0.05	0.1	0.11	8.1	0.2	<0.05	4	0.8	<0.2
13JKDD117	Soil			17	0.15	95	0.010	<20	1.37	0.005	0.04	0.1	0.06	2.7	<0.1	<0.05	7	<0.5	<0.2
13JKDD118	Soil			21	0.36	428	0.003	<20	2.35	0.008	0.06	0.1	0.20	5.9	0.2	<0.05	5	0.7	<0.2
13JKDD119	Soil			22	0.32	384	0.002	<20	1.66	0.009	0.10	0.1	0.29	10.1	0.2	0.06	4	1.4	<0.2
13JKDD120	Soil			25	0.43	581	0.002	<20	2.20	0.008	0.08	0.1	0.28	10.3	0.2	<0.05	5	0.8	<0.2
13JKDD121	Soil			24	0.38	638	0.003	<20	1.87	0.008	0.06	<0.1	0.26	7.3	0.2	<0.05	5	0.8	<0.2
13JKDD122	Soil			28	0.53	980	0.002	<20	2.34	0.010	0.11	<0.1	0.42	10.6	0.2	0.05	5	1.2	<0.2
13JKDD123	Soil			26	0.41	523	0.004	<20	1.64	0.007	0.07	<0.1	0.23	10.4	0.2	<0.05	5	0.8	0.2
13JKDD124	Soil			16	0.11	87	0.008	<20	1.10	0.006	0.03	0.1	0.05	1.6	<0.1	<0.05	6	<0.5	<0.2
13JKDD125	Soil			12	0.06	76	0.004	<20	0.99	0.005	0.03	<0.1	0.04	1.1	<0.1	<0.05	5	<0.5	<0.2
13JKDD126	Soil			8	0.13	515	0.003	<20	0.65	0.006	0.03	<0.1	0.10	2.0	<0.1	<0.05	3	<0.5	<0.2
13JKDD127	Soil			25	0.46	398	0.006	<20	1.51	0.006	0.05	<0.1	0.15	5.9	<0.1	<0.05	4	0.5	<0.2
13JKDD128	Soil			18	0.35	736	0.002	<20	1.69	0.007	0.06	0.1	0.25	4.9	0.1	<0.05	4	<0.5	<0.2

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Method	Analyte	Unit	MDL	1DX Mo	1DX Cu	1DX Pb	1DX Zn	1DX Ag	1DX Ni	1DX Co	1DX Mn	1DX Fe	1DX As	1DX Au	1DX Th	1DX Sr	1DX Cd	1DX Sb	1DX Bi	1DX V	1DX Ca	1DX P	1DX La
				ppm	ppm	ppm	ppm	ppm	ppm	ppm	ppm	%	ppm	ppb	ppm	ppm	ppm	ppm	ppm	ppm	%	%	ppm
				0.1	0.1	0.1	1	0.1	0.1	0.1	1	0.01	0.5	0.5	0.1	1	0.1	0.1	0.1	2	0.01	0.001	1
13JKDD129	Soil			1.3	41.5	21.8	64	1.2	12.7	4.6	125	2.20	15.3	<0.5	0.2	14	0.8	0.6	0.2	56	0.14	0.060	5
13JKDD130	Soil			1.6	29.9	20.2	88	0.4	12.3	7.3	590	4.21	22.5	<0.5	0.2	8	0.3	0.6	0.2	64	0.06	0.229	7
13JKDD131	Soil			1.4	52.1	28.4	145	0.9	25.3	9.6	711	3.60	26.9	3.0	0.6	39	0.9	0.8	0.2	47	0.39	0.116	20
13JKDD132	Soil			2.2	48.5	32.4	87	0.9	8.9	5.7	205	3.84	30.9	0.7	0.3	9	0.5	1.2	0.3	54	0.07	0.272	6
13JKDD133	Soil			3.3	75.2	74.3	175	1.6	21.5	10.7	1356	4.30	30.2	10.1	1.8	66	1.0	0.7	0.4	56	0.61	0.151	53
13JKDD134	Soil			1.4	49.1	34.2	87	0.5	14.7	3.8	155	2.25	19.2	0.6	<0.1	42	1.7	0.8	0.2	45	0.39	0.057	13
13JKDD135	Soil			1.3	16.6	136.7	179	0.6	4.7	4.6	745	2.77	112.3	1.9	1.1	32	1.1	2.8	0.5	30	0.44	0.059	21
13JKDD136	Soil			1.2	55.0	84.6	283	5.0	11.8	13.1	3271	4.46	130.8	6.0	0.3	45	2.0	2.9	0.4	48	0.49	0.175	29
13JKDD137	Soil			1.4	53.2	184.5	611	0.6	7.8	9.3	789	5.91	147.7	1.5	0.5	8	0.9	3.8	0.6	104	0.07	0.096	8
13JKDD138	Soil			2.1	124.1	175.9	702	12.8	37.0	11.3	3191	3.97	229.6	37.0	0.7	133	5.3	2.2	0.8	34	1.41	0.202	87
13JKDD139	Soil			2.6	107.3	150.0	264	2.2	13.8	6.3	458	3.39	218.5	11.4	0.4	74	2.3	2.5	0.9	46	0.65	0.094	33
13JKDD140	Soil			1.5	70.8	429.1	789	3.7	28.8	18.1	2981	10.54	2173.6	41.4	1.6	10	3.6	11.0	1.7	53	0.13	0.164	13
13JKDD141	Soil			1.6	30.4	112.2	224	2.2	18.3	10.2	1355	5.13	371.4	1.2	0.4	10	2.0	4.0	0.5	49	0.08	0.241	6
13JKDD142	Soil			1.3	64.8	50.7	220	0.9	20.9	5.9	354	2.70	79.2	1.6	<0.1	56	2.5	1.1	0.3	39	0.39	0.071	16
13JKDD143	Soil			1.0	26.7	20.0	93	0.4	6.5	3.1	93	1.71	30.4	1.0	<0.1	14	1.5	0.6	0.3	34	0.10	0.049	5
13JKDD144	Soil			1.3	26.1	16.7	72	0.3	7.0	3.1	76	1.80	25.7	0.9	<0.1	10	0.8	0.5	0.2	36	0.07	0.057	3
13JKDD145	Soil			1.7	32.4	39.8	139	2.5	13.4	5.4	331	4.75	63.7	1.1	1.0	7	0.7	0.8	0.5	53	0.05	0.141	5
13JKDD146	Soil			1.4	35.5	60.8	142	0.6	15.1	6.3	298	5.20	271.3	2.0	1.0	12	0.4	0.8	1.0	57	0.08	0.283	5
13JKDD147	Soil			1.4	40.9	65.6	60	1.5	6.8	2.8	132	2.72	42.8	10.2	0.4	9	0.3	1.1	0.8	41	0.04	0.106	4
13JKDD148	Soil			9.0	85.3	86.9	98	2.9	5.7	3.2	123	4.75	91.8	2.2	0.4	44	0.3	2.3	0.9	59	0.02	0.228	12
13JKDD149	Soil			1.4	23.5	21.9	50	0.5	5.2	2.7	92	1.38	19.4	1.0	<0.1	5	0.1	0.7	0.4	37	0.02	0.046	4
13JKDD150	Soil			1.8	28.6	70.9	110	1.3	7.8	3.7	237	3.16	31.9	2.4	0.5	6	0.7	1.4	0.7	49	0.04	0.119	6
13JKDD151	Soil			5.1	377.4	205.4	93	2.8	9.1	3.9	310	2.15	23.4	55.5	<0.1	24	1.1	2.3	1.8	31	0.10	0.088	13
13JKWD15	Soil			6.2	45.4	8.6	28	0.6	5.4	2.1	56	1.01	7.0	5.0	<0.1	6	0.1	0.4	0.3	32	0.03	0.047	5
13JKWD16	Soil			40.9	76.4	106.5	52	7.2	10.6	3.7	193	7.70	32.9	26.6	1.9	33	0.5	1.8	1.0	58	0.05	0.251	10
13JKWD17	Soil			1.5	16.2	9.6	31	7.4	4.5	1.8	81	0.85	6.1	0.7	<0.1	12	0.5	0.4	0.2	20	0.12	0.067	2
13JKWD18	Soil			2.0	35.6	17.3	60	2.2	15.3	4.9	252	5.14	14.3	1.7	<0.1	7	0.5	0.6	0.2	60	0.03	0.152	5
13JKWD19	Soil			4.0	37.5	21.9	68	0.4	7.5	2.9	92	1.76	11.7	1.1	<0.1	17	0.4	1.0	0.4	39	0.11	0.069	5
13JKWD20	Soil			21.9	259.9	125.3	186	1.4	9.4	5.7	272	5.45	76.9	10.3	0.2	29	0.4	4.3	1.9	80	0.03	0.110	12
13JKWD21	Soil			3.5	31.1	41.1	37	0.6	2.2	1.5	67	0.86	16.7	0.7	0.2	7	0.1	2.7	0.1	23	0.05	0.058	11

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Method	Analyte	1DX	1DX	1DX	1DX	1DX	1DX	1DX	1DX	1DX	1DX	1DX	1DX	1DX	1DX	1DX	
		Cr	Mg	Ba	Ti	B	Al	Na	K	W	Hg	Sc	Ti	S	Ga	Se	Te
Unit		ppm	%	ppm	%	ppm	%	%	ppm	ppm	ppm	ppm	%	ppm	ppm	ppm	
MDL		1	0.01	1	0.001	20	0.01	0.001	0.01	0.1	0.01	0.1	0.05	1	0.5	0.2	
13JKDD129	Soil	12	0.03	175	0.004	<20	0.83	0.006	0.03	<0.1	0.06	1.7	<0.1	<0.05	5	<0.5	<0.2
13JKDD130	Soil	16	0.13	132	0.007	<20	1.41	0.005	0.03	<0.1	0.06	1.9	0.1	<0.05	5	<0.5	<0.2
13JKDD131	Soil	22	0.33	262	0.005	<20	1.55	0.005	0.06	<0.1	0.17	4.3	0.1	<0.05	4	<0.5	<0.2
13JKDD132	Soil	13	0.07	89	0.005	<20	0.78	0.005	0.03	0.1	0.10	2.3	<0.1	<0.05	5	<0.5	<0.2
13JKDD133	Soil	19	0.25	777	0.002	<20	2.54	0.006	0.06	<0.1	0.34	6.5	0.2	<0.05	5	0.9	<0.2
13JKDD134	Soil	12	0.05	283	0.006	<20	0.82	0.005	0.03	0.1	0.03	0.9	<0.1	<0.05	4	<0.5	<0.2
13JKDD135	Soil	6	0.07	407	0.003	<20	1.05	0.003	0.05	0.2	0.03	1.2	0.2	<0.05	3	<0.5	<0.2
13JKDD136	Soil	11	0.12	558	0.002	<20	1.23	0.004	0.06	0.1	0.22	3.8	0.3	<0.05	3	1.3	<0.2
13JKDD137	Soil	9	0.08	107	0.003	<20	0.78	0.005	0.03	0.2	0.05	4.2	<0.1	<0.05	5	<0.5	<0.2
13JKDD138	Soil	16	0.34	1259	0.002	<20	2.12	0.009	0.08	0.1	0.91	4.9	0.2	0.09	3	4.8	0.2
13JKDD139	Soil	11	0.21	476	0.005	<20	1.09	0.006	0.10	0.1	0.24	2.1	0.2	<0.05	4	1.2	0.4
13JKDD140	Soil	24	0.32	222	0.003	<20	2.24	0.004	0.05	0.2	0.30	6.7	0.2	<0.05	4	1.7	<0.2
13JKDD141	Soil	18	0.22	140	0.008	<20	1.15	0.003	0.06	0.1	0.12	2.2	0.1	<0.05	4	<0.5	<0.2
13JKDD142	Soil	12	0.07	343	0.007	<20	0.65	0.005	0.04	0.1	0.11	0.8	<0.1	<0.05	3	0.8	0.3
13JKDD143	Soil	6	0.02	117	0.003	<20	0.56	0.005	0.03	<0.1	0.02	0.3	<0.1	<0.05	4	<0.5	<0.2
13JKDD144	Soil	6	0.02	89	0.003	<20	0.55	0.004	0.03	0.1	0.03	0.4	<0.1	<0.05	4	<0.5	<0.2
13JKDD145	Soil	17	0.21	71	0.008	<20	1.62	0.004	0.03	0.2	0.09	3.4	<0.1	<0.05	5	0.5	<0.2
13JKDD146	Soil	15	0.24	126	0.008	<20	1.41	0.005	0.05	0.1	0.05	3.5	0.1	<0.05	5	<0.5	0.3
13JKDD147	Soil	9	0.08	58	0.007	<20	0.87	0.004	0.04	0.1	0.15	1.8	0.2	<0.05	4	<0.5	0.2
13JKDD148	Soil	9	0.05	162	0.006	<20	0.94	0.005	0.07	0.2	0.11	1.5	0.2	0.09	5	<0.5	0.3
13JKDD149	Soil	5	0.02	48	0.005	<20	0.55	0.003	0.03	0.1	0.03	0.6	<0.1	<0.05	4	<0.5	<0.2
13JKDD150	Soil	10	0.07	78	0.009	<20	1.00	0.004	0.03	0.1	0.06	1.7	0.1	<0.05	5	<0.5	<0.2
13JKDD151	Soil	10	0.10	261	0.005	<20	0.99	0.004	0.06	<0.1	0.23	0.5	0.5	<0.05	3	0.6	0.3
13JKWD15	Soil	6	0.02	77	0.003	<20	0.54	0.003	0.03	0.1	0.03	0.4	<0.1	<0.05	4	<0.5	<0.2
13JKWD16	Soil	20	0.15	188	0.015	<20	1.87	0.009	0.12	0.3	0.26	2.5	0.2	0.19	8	0.9	<0.2
13JKWD17	Soil	5	0.02	100	0.005	<20	0.28	0.005	0.04	<0.1	0.11	0.4	<0.1	<0.05	2	0.5	<0.2
13JKWD18	Soil	21	0.24	52	0.018	<20	1.65	0.005	0.03	0.1	0.07	1.6	<0.1	<0.05	6	<0.5	<0.2
13JKWD19	Soil	8	0.03	128	0.003	<20	0.66	0.005	0.04	0.1	0.04	0.3	<0.1	<0.05	4	<0.5	<0.2
13JKWD20	Soil	12	0.23	201	0.006	<20	1.19	0.015	0.11	0.2	0.06	2.6	0.2	0.18	6	0.9	0.4
13JKWD21	Soil	2	0.02	67	0.002	<20	0.49	0.002	0.04	<0.1	0.04	0.6	0.1	<0.05	4	<0.5	<0.2

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Method	Analyte	Unit	MDL	1DX Mo	1DX Cu	1DX Pb	1DX Zn	1DX Ag	1DX Ni	1DX Co	1DX Mn	1DX Fe	1DX As	1DX Au	1DX Th	1DX Sr	1DX Cd	1DX Sb	1DX Bi	1DX V	1DX Ca	1DX P	1DX La
				ppm	ppm	ppm	ppm	ppm	ppm	ppm	ppm	%	ppm	ppb	ppm	ppm	ppm	ppm	ppm	%	%	%	ppm
				0.1	0.1	0.1	1	0.1	0.1	0.1	1	0.01	0.5	0.5	0.1	1	0.1	0.1	0.1	2	0.01	0.001	1
13JKWD22	Soil			27.6	243.2	34.6	86	1.0	9.7	8.1	406	2.99	27.1	7.8	<0.1	7	0.2	2.1	0.5	63	0.03	0.058	6
13JKWD23	Soil			16.6	305.8	35.9	79	2.1	6.7	5.3	542	3.33	47.5	79.7	0.2	14	0.1	9.0	0.7	51	0.09	0.113	9
13JKWD24	Soil			9.0	43.7	8.8	35	0.1	6.6	2.8	131	1.45	19.9	0.9	<0.1	5	0.2	0.7	0.2	42	0.02	0.040	5
13JKWD41	Soil			1.9	60.7	30.0	97	1.4	16.4	16.2	3640	2.65	145.1	6.3	<0.1	52	1.1	1.2	0.5	37	0.52	0.110	32
13JKWD42	Soil			2.1	43.2	43.5	92	0.9	8.6	5.5	416	2.73	145.8	2.2	<0.1	15	0.6	2.3	1.0	46	0.07	0.092	6
13JKWD43	Soil			1.3	19.1	11.9	47	0.8	8.7	3.6	174	2.28	31.7	1.0	0.4	8	0.1	0.4	0.3	41	0.05	0.121	5
13JKWD44	Soil			1.8	26.8	36.1	79	1.5	7.5	3.8	176	2.95	108.3	1.2	<0.1	8	0.3	1.5	0.4	42	0.02	0.130	6
13JKWD45	Soil			1.1	106.5	37.7	153	1.8	19.6	3.9	172	1.37	26.1	2.9	<0.1	55	3.2	0.5	0.4	23	0.41	0.080	24
13JKWD46	Soil			1.1	19.2	16.0	62	0.7	16.1	5.1	209	4.02	14.3	1.3	1.9	5	0.4	0.3	0.2	40	0.04	0.150	7
13JKWD47	Soil			1.1	15.6	8.5	33	0.8	4.8	2.6	74	1.18	14.4	1.5	<0.1	5	0.2	0.3	0.3	34	0.03	0.039	4
13JKWD48	Soil			1.5	34.1	19.4	55	0.6	4.8	2.8	118	1.55	20.6	2.8	<0.1	9	0.3	0.5	0.6	37	0.08	0.047	4
13JKWD49	Soil			1.5	91.3	21.7	84	0.9	15.6	5.4	305	5.33	22.1	2.2	0.8	6	0.2	0.5	0.4	56	0.03	0.272	4
13JKWD50	Soil			5.6	69.8	16.3	56	0.6	5.2	2.9	85	2.39	15.2	4.7	0.5	8	0.1	0.4	0.5	44	0.02	0.075	5
13JKWD51	Soil			11.7	109.3	22.7	30	1.5	4.1	1.6	47	2.39	12.7	7.4	0.2	12	<0.1	0.4	0.7	62	0.02	0.074	5
13JKWD52	Soil			2.7	262.3	36.2	60	8.1	9.4	3.7	167	6.04	19.2	11.9	0.6	14	0.8	0.8	0.5	62	0.03	0.194	8
13JKBD46	Soil			4.8	11.9	4.1	10	0.3	2.5	1.1	22	0.40	2.5	1.5	<0.1	5	<0.1	0.1	<0.1	17	0.01	0.041	4
13JKBD47	Soil			10.0	40.3	5.9	16	0.2	2.7	2.3	184	0.57	4.5	<0.5	<0.1	6	0.2	0.2	0.1	18	0.03	0.067	11
13JKBD48	Soil			10.3	243.8	18.5	39	0.7	8.7	7.2	151	1.49	21.4	0.6	<0.1	10	0.2	0.4	0.3	37	0.06	0.086	7
13JKBD49	Soil			9.2	278.1	22.9	53	0.5	10.7	12.3	481	2.45	10.5	0.8	<0.1	13	0.4	0.4	0.2	53	0.10	0.079	5
13JKBD50	Soil			4.3	303.1	51.7	78	0.3	13.4	7.4	536	2.88	18.9	<0.5	<0.1	13	0.3	0.8	0.2	50	0.07	0.074	11
13JKBD51	Soil			1.3	19.5	10.6	44	0.2	12.9	4.5	203	3.41	10.8	<0.5	0.1	4	<0.1	0.3	0.2	60	0.03	0.102	3
13JKBD52	Soil			1.4	138.2	11.9	134	0.1	27.4	9.1	728	3.14	9.6	1.6	0.3	31	0.3	0.2	0.1	46	0.37	0.067	29
13JKBD53	Soil			1.3	29.9	16.1	66	0.4	15.6	5.8	324	3.87	17.4	<0.5	<0.1	6	0.1	0.4	0.2	60	0.06	0.141	4
13JKBD54	Soil			1.4	24.0	9.8	50	0.3	10.1	4.3	173	2.49	11.5	<0.5	<0.1	6	<0.1	0.3	0.1	51	0.05	0.060	4
13JKBD55	Soil			1.6	32.2	13.4	48	1.0	9.9	6.1	196	3.73	48.8	<0.5	0.2	10	0.2	0.9	0.6	58	0.02	0.078	8
13JKBD56	Soil			4.2	186.0	26.8	115	0.5	12.5	9.0	631	3.86	111.1	0.8	0.3	14	0.3	1.9	0.4	52	0.12	0.081	23
13JKBD57	Soil			5.5	52.0	20.0	66	0.5	9.9	6.4	320	3.59	38.3	<0.5	<0.1	6	0.2	0.9	0.2	55	0.07	0.091	5
13JKBD58	Soil			7.9	46.7	13.9	68	0.6	11.2	4.3	165	2.65	17.0	<0.5	<0.1	8	0.4	0.5	0.1	55	0.07	0.085	5
13JKBD59	Soil			8.2	141.9	19.3	95	0.3	19.9	5.8	204	3.90	23.0	<0.5	<0.1	13	0.3	0.4	0.1	56	0.11	0.145	5
13JKBD60	Soil			1.8	20.3	16.3	56	0.3	8.5	4.1	408	2.31	15.8	<0.5	<0.1	5	<0.1	0.4	0.2	54	0.03	0.071	5



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Project: None Given
Report Date: October 29, 2013

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Part: 2 of 2

CERTIFICATE OF ANALYSIS

SMI13000393.1

Method Analyte	Unit	1DX	1DX	1DX	1DX	1DX	1DX	1DX	1DX	1DX	1DX	1DX	1DX	1DX	1DX	1DX	
		Cr	Mg	Ba	Ti	B	Al	Na	K	W	Hg	Sc	Ti	S	Ga	Se	Te
MDL		ppm	%	ppm	%	ppm	%	%	ppm	ppm	ppm	ppm	%	ppm	ppm	ppm	
		1	0.01	1	0.001	20	0.01	0.001	0.01	0.1	0.01	0.1	0.05	1	0.5	0.2	
13JKWD22	Soil	8	0.06	74	0.007	<20	0.78	0.003	0.03	0.2	0.03	1.4	0.1	<0.05	6	0.6	<0.2
13JKWD23	Soil	7	0.09	247	0.004	<20	1.03	0.007	0.05	0.1	0.04	0.9	0.2	0.07	7	0.6	<0.2
13JKWD24	Soil	6	0.02	80	0.003	<20	0.55	0.003	0.03	<0.1	0.03	0.3	0.3	<0.05	4	<0.5	<0.2
13JKWD41	Soil	9	0.13	906	0.005	<20	1.15	0.006	0.05	0.1	0.18	1.3	0.6	<0.05	5	0.7	<0.2
13JKWD42	Soil	8	0.04	141	0.005	<20	0.75	0.006	0.05	0.1	0.06	0.9	0.2	<0.05	5	<0.5	0.3
13JKWD43	Soil	10	0.10	49	0.006	<20	1.02	0.004	0.03	0.1	0.03	1.5	0.1	<0.05	5	<0.5	<0.2
13JKWD44	Soil	9	0.06	105	0.005	<20	1.13	0.005	0.03	0.1	0.06	0.5	0.2	<0.05	5	<0.5	0.2
13JKWD45	Soil	8	0.05	706	0.002	<20	0.70	0.006	0.05	0.1	0.08	0.5	<0.1	<0.05	3	<0.5	<0.2
13JKWD46	Soil	21	0.24	73	0.011	<20	1.58	0.004	0.03	0.1	0.07	2.9	<0.1	<0.05	5	<0.5	<0.2
13JKWD47	Soil	5	0.02	46	0.005	<20	0.57	0.004	0.03	<0.1	0.02	0.4	0.2	<0.05	5	<0.5	<0.2
13JKWD48	Soil	5	0.03	76	0.004	<20	0.56	0.004	0.03	0.1	0.03	0.4	0.1	<0.05	4	<0.5	<0.2
13JKWD49	Soil	21	0.24	63	0.009	<20	1.64	0.004	0.04	0.1	0.06	2.9	0.2	<0.05	6	0.6	<0.2
13JKWD50	Soil	6	0.04	83	0.005	<20	0.94	0.005	0.04	0.1	0.09	1.8	0.1	<0.05	5	<0.5	<0.2
13JKWD51	Soil	8	0.04	109	0.010	<20	0.96	0.016	0.04	0.2	0.06	2.1	0.2	0.10	5	<0.5	<0.2
13JKWD52	Soil	17	0.15	70	0.017	<20	1.68	0.006	0.04	0.2	0.15	2.5	0.2	<0.05	8	<0.5	0.4
13JKBD46	Soil	5	0.02	52	0.003	<20	0.59	0.005	0.03	<0.1	<0.01	0.3	0.2	<0.05	5	<0.5	<0.2
13JKBD47	Soil	4	0.02	52	0.001	<20	0.56	0.006	0.04	<0.1	0.04	0.3	0.2	<0.05	5	<0.5	<0.2
13JKBD48	Soil	8	0.04	120	0.002	<20	0.84	0.006	0.04	0.1	0.07	0.4	0.3	<0.05	5	<0.5	<0.2
13JKBD49	Soil	11	0.07	180	0.004	<20	0.99	0.006	0.05	0.1	0.05	0.6	0.3	<0.05	6	<0.5	<0.2
13JKBD50	Soil	12	0.09	260	0.003	<20	0.93	0.006	0.05	0.1	0.19	0.7	0.3	<0.05	5	<0.5	<0.2
13JKBD51	Soil	14	0.13	43	0.011	<20	1.28	0.004	0.03	<0.1	0.04	1.9	0.1	<0.05	6	<0.5	<0.2
13JKBD52	Soil	23	0.45	784	0.003	<20	1.82	0.007	0.05	<0.1	0.07	2.5	0.1	<0.05	5	<0.5	<0.2
13JKBD53	Soil	16	0.14	74	0.010	<20	1.23	0.006	0.04	0.1	0.09	2.0	0.1	<0.05	6	<0.5	<0.2
13JKBD54	Soil	9	0.04	111	0.005	<20	0.85	0.005	0.02	<0.1	0.04	0.8	0.2	<0.05	5	<0.5	<0.2
13JKBD55	Soil	8	0.03	84	0.002	<20	0.71	0.004	0.04	<0.1	0.03	2.4	0.4	<0.05	4	<0.5	<0.2
13JKBD56	Soil	9	0.05	248	0.003	<20	0.90	0.004	0.05	0.1	0.07	1.9	0.3	<0.05	4	<0.5	<0.2
13JKBD57	Soil	9	0.05	100	0.004	<20	0.86	0.004	0.04	1.0	0.04	0.9	0.1	<0.05	5	<0.5	<0.2
13JKBD58	Soil	10	0.05	145	0.004	<20	1.03	0.006	0.03	0.1	0.06	0.6	0.2	<0.05	5	<0.5	<0.2
13JKBD59	Soil	18	0.20	262	0.005	<20	1.51	0.006	0.04	0.1	0.07	1.3	0.2	<0.05	5	<0.5	<0.2
13JKBD60	Soil	7	0.04	59	0.008	<20	0.77	0.004	0.02	<0.1	0.02	1.1	0.1	<0.05	5	<0.5	<0.2

This report supersedes all previous preliminary and final reports with this file number dated prior to the date on this certificate. Signature indicates final approval; preliminary reports are unsigned and should be used for reference only.

QUALITY CONTROL REPORT

SMI13000393.1

Method	1DX	1DX	1DX	1DX	1DX	1DX	1DX	1DX	1DX	1DX	1DX	1DX	1DX	1DX	1DX	1DX	1DX	1DX	1DX	1DX	
Analyte	Mo	Cu	Pb	Zn	Ag	Ni	Co	Mn	Fe	As	Au	Th	Sr	Cd	Sb	Bi	V	Ca	P	La	
Unit	ppm	ppm	ppm	ppm	ppm	ppm	ppm	ppm	%	ppm	ppb	ppm	ppm	ppm	ppm	ppm	ppm	%	%	ppm	
MDL	0.1	0.1	0.1	1	0.1	0.1	0.1	1	0.01	0.5	0.5	0.1	1	0.1	0.1	0.1	2	0.01	0.001	1	
Pulp Duplicates																					
13JKDD121	Soil	1.2	70.7	14.1	85	2.1	30.5	13.0	2736	4.14	12.6	1.0	0.6	107	0.8	0.3	0.1	54	1.24	0.073	34
REP 13JKDD121	QC	1.1	70.9	14.5	82	2.2	30.5	13.3	2605	4.10	13.8	1.0	0.6	110	0.9	0.3	0.1	53	1.23	0.071	33
13JKWD20	Soil	21.9	259.9	125.3	186	1.4	9.4	5.7	272	5.45	76.9	10.3	0.2	29	0.4	4.3	1.9	80	0.03	0.110	12
REP 13JKWD20	QC	22.7	251.7	124.2	179	1.4	8.7	5.5	261	5.21	78.0	11.5	0.2	28	0.4	4.5	1.9	79	0.03	0.107	12
13JKBD58	Soil	7.9	46.7	13.9	68	0.6	11.2	4.3	165	2.65	17.0	<0.5	<0.1	8	0.4	0.5	0.1	55	0.07	0.085	5
REP 13JKBD58	QC	7.3	45.6	13.2	65	0.6	10.5	4.4	156	2.48	16.7	<0.5	<0.1	8	0.3	0.5	0.1	53	0.07	0.081	5
Reference Materials																					
STD DS10	Standard	14.5	151.9	159.5	353	1.7	74.3	12.5	871	2.65	45.5	51.9	7.4	63	2.4	7.9	12.5	42	1.04	0.074	15
STD DS10	Standard	13.0	158.6	149.6	361	1.8	70.4	12.2	868	2.63	45.7	81.6	7.3	62	2.5	8.7	12.3	40	0.99	0.074	15
STD DS10	Standard	12.7	149.1	155.1	344	1.9	72.8	12.6	847	2.65	43.8	59.8	6.2	54	2.1	6.5	9.7	43	0.98	0.074	15
STD OREAS45EA	Standard	1.5	622.5	14.4	28	0.2	344.5	48.5	376	23.57	9.3	50.6	9.2	3	<0.1	0.3	0.3	270	0.03	0.027	6
STD OREAS45EA	Standard	1.3	577.1	13.2	26	0.2	305.2	43.7	348	21.48	8.7	52.6	9.1	3	<0.1	0.3	0.2	249	0.03	0.024	6
STD OREAS45EA	Standard	1.3	634.8	13.1	29	0.2	345.1	48.9	358	22.38	9.5	54.3	9.3	3	<0.1	0.2	0.2	263	0.03	0.028	6
STD DS10 Expected		14.69	154.61	150.55	352.9	1.96	74.6	12.9	861	2.7188	43.7	91.9	7.5	67.1	2.48	9.51	11.65	43	1.0355	0.073	17.5
STD OREAS45EA Expected		1.39	709	14.3	28.9	0.26	381	52	400	23.51	9.1	53	10.7	3.5	0.02	0.2	0.26	303	0.036	0.029	6.57
BLK	Blank	<0.1	<0.1	<0.1	<1	<0.1	<0.1	<0.1	<1	<0.01	<0.5	<0.5	<0.1	<1	<0.1	<0.1	<1	<2	<0.01	<0.001	<1
BLK	Blank	<0.1	<0.1	<0.1	<1	<0.1	<0.1	<0.1	<1	<0.01	<0.5	<0.5	<0.1	<1	<0.1	<0.1	<1	<2	<0.01	<0.001	<1
BLK	Blank	<0.1	<0.1	<0.1	<1	<0.1	<0.1	<0.1	<1	<0.01	<0.5	<0.5	<0.1	<1	<0.1	<0.1	<1	<2	<0.01	<0.001	<1



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Project: None Given
 Report Date: October 29, 2013

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QUALITY CONTROL REPORT

SMI13000393.1

Method	1DX	1DX	1DX	1DX	1DX	1DX	1DX	1DX	1DX	1DX	1DX	1DX	1DX	1DX	1DX	1DX	
Analyte	Cr	Mg	Ba	Ti	B	Al	Na	K	W	Hg	Sc	Tl	S	Ga	Se	Te	
Unit	ppm	%	ppm	%	ppm	%	%	%	ppm	ppm	ppm	ppm	%	ppm	ppm	ppm	
MDL	1	0.01	1	0.001	20	0.01	0.001	0.01	0.1	0.01	0.1	0.1	0.05	1	0.5	0.2	
Pulp Duplicates																	
13JKDD121	Soil	24	0.38	638	0.003	<20	1.87	0.008	0.06	<0.1	0.26	7.3	0.2	<0.05	5	0.8	<0.2
REP 13JKDD121	QC	23	0.37	635	0.002	<20	1.84	0.007	0.06	<0.1	0.26	7.0	0.1	<0.05	5	1.1	<0.2
13JKWD20	Soil	12	0.23	201	0.006	<20	1.19	0.015	0.11	0.2	0.06	2.6	0.2	0.18	6	0.9	0.4
REP 13JKWD20	QC	12	0.22	196	0.006	<20	1.21	0.016	0.11	0.1	0.06	2.6	0.2	0.16	6	1.1	0.4
13JKBD58	Soil	10	0.05	145	0.004	<20	1.03	0.006	0.03	0.1	0.06	0.6	0.2	<0.05	5	<0.5	<0.2
REP 13JKBD58	QC	10	0.05	142	0.004	<20	0.96	0.005	0.03	<0.1	0.05	0.6	0.2	<0.05	5	<0.5	<0.2
Reference Materials																	
STD DS10	Standard	54	0.77	381	0.069	<20	0.98	0.055	0.31	2.8	0.27	2.6	5.0	0.27	4	2.5	5.0
STD DS10	Standard	52	0.76	365	0.067	<20	0.96	0.050	0.32	2.9	0.34	2.5	4.8	0.28	4	1.7	4.9
STD DS10	Standard	53	0.74	383	0.065	<20	0.96	0.057	0.32	2.9	0.31	2.8	4.9	0.24	4	2.1	4.6
STD OREAS45EA	Standard	810	0.09	134	0.080	<20	2.84	0.018	0.05	<0.1	0.02	73.2	<0.1	<0.05	12	0.6	<0.2
STD OREAS45EA	Standard	742	0.08	137	0.080	<20	2.46	0.017	0.05	<0.1	<0.01	68.6	<0.1	<0.05	11	1.0	<0.2
STD OREAS45EA	Standard	872	0.09	132	0.079	<20	2.78	0.019	0.05	<0.1	<0.01	72.4	<0.1	<0.05	12	0.9	<0.2
STD DS10 Expected		54.6	0.7651	349	0.0817		1.0259	0.0638	0.3245	3.34	0.289	2.8	4.79	0.2743	4.3	2.3	4.89
STD OREAS45EA Expected		849	0.095	148	0.0875		3.13	0.02	0.053			78	0.072	0.036	11.7	0.6	0.07
BLK	Blank	<1	<0.01	<1	<0.001	<20	<0.01	<0.001	<0.01	<0.1	<0.01	<0.1	<0.1	<0.05	<1	<0.5	<0.2
BLK	Blank	<1	<0.01	<1	<0.001	<20	<0.01	<0.001	<0.01	<0.1	<0.01	<0.1	<0.1	<0.05	<1	<0.5	<0.2
BLK	Blank	<1	<0.01	<1	<0.001	<20	<0.01	<0.001	<0.01	<0.1	<0.01	<0.1	<0.1	<0.05	<1	<0.5	<0.2